Gleanings in Bee Culture

"Created to help beekeepers succeed."

July, 1950 Vol. 78, No. 7

A clover field like this is what brings joy to the heart of a beekeeper provided the farmer doesn't cut it before the bees have a chance to work on it.—Photo by Melvin Pellet.

What is the Cause of Low Honey Yields?

By Gordon Bell, Mazon, Illinois

At every beekeepers' meeting the old question of prices comes up but like the weather we all talk about it but little is done about it. It is common knowledge that the higher production we have per colony the lower the cost per pound. Since many attempts have been made to boost prices the only remaining avenues to increase profits even to a living wage are subsidies or larger yields. Subsidies may become worse than the ills they seek to cure. Larger yields is the most timely subsubject to consider.

Until I am proved wrong I am convinced that the answer to our question lies in the soil. Soil was and still is looked on by some as an inexhaustible something to be exploited for immediate profits, yet during the centuries the penalty exacted by Nature has always been certain and severe.

Excessive grazing and cropping always produces ruin to the people as shown by buried cities in the Near East. Why are they buried? Erosion, both water and wind, and not wars or disease, show definitely

what caused their decay. Mesopotamia (now Iraq) formerly supported up to 25 million and now its population is 4 million. Long continued soil abuses cause wind and water erosion, buried cities, silted up rivers, and irrigation systems. Similar conditions are found in Egypt, Cyprus, China, and a good start in our own country, and given more time a similar fate awaits the United States.

Changing weather has little to do with such conditions as shown by the Forest of Lebanon at the eastern end of the Mediterranean Sea. That forest provided timber for the Roman fleet 5000 years ago. Today the few remaining seed trees of that 2000-square-mile forest are staging a comeback when protected from stock. The above shows the forest disappearance was man made and not caused by drouth.

In our own country we read of or experience floods and dust storms. Why? Weather records for a hundred years or more show a remarkably steady climate, so why do we have floods and dust storms with increasing frequency? The answer is soil abuses with its inevitable loss of organic matter and fertility.

After only 40 years of hard farming in the corn belt of Illinois tests show the weight of a cubic foot of topsoil has increased from 65 pounds (virgin soil) to 85 pounds with the organic matter decreasing from approximately 5 to 2½ percent, thereby reducing the water-holding capacity of the soil greatly. Many soils have mineral deficiencies also, but the loss of humus or organic matter is the reason why hard-packed soil erodes faster than virgin soil. The Potomac River receives one-half billion tons of topsoil per year while the Mississippi transports the topsoil from 1000 acres daily to the sea. Such losses cannot be continued forever if the American people are to eat. Space does not permit more on such wholesale soil abuses. How does this concern the beekeeper?

Some Important Honey-Producing Areas have Failed

During the past 50 years we have seen several important honey-producing regions fail. Uvalde, Texas, and Denver, Colorado, both were in very important areas. More recently the white and sweet clover regions have had a steady declining yield. Why? The answer lies in the soil although pasturage cuts may be the secondary cause. I am thoroughly convinced the real answer lies in the loss of organic matter in the soil with weather conditions having little to do with it. It is always possible to have adverse weather to interfere with an occasional honey crop but the long periods of poor crops over such wide areas rule out the weather as our No. 1 problem.

The United States formerly had very large honey yields compared to Europe. Our soils were newer, better, and in larger tracts. Now we read of sensational crops in Africa and Australia. Can that answer be in the soil also?

Until 10 years ago I enjoyed very satisfactory crops for 25 years in the sweet clover region of Northern Minnesota and to a lesser extent in the sweet clover region of Northern Illinois. The climate has not changed, yet in both regions during the past 10 years the honey crops have been much below past seasons. The real reason lies in the soil. The average soil in Northern Minnesota and Eastern North Dakota has lime even to excess while soil in Northern Illinois lacks it. Both soils pack easily now. Mineral deficiencies are apparently important but lack of humus is even more apparent.

Soil Conservation Needed

Every effort of all soil conservation agencies—county, state, and national—is for the benefit of the beekeeper. The planting of more legumes of every kind—grasses, trees, and shrubs is very strongly advocated and all agree the bee is very necessary in that huge program. It is not improbable that the commercial beekeeper may get as much revenue in the future for pollination services as from honey and wax.

A partial awakening by U. S. farmers to the above facts can be seen now in the extremely high prices being paid for legume and grass seeds. In this typical Illinois corn belt area we have had 60 percent of this land in cultivated crops compared to 40 percent only 25 years ago. No matter how fertile this soil was, such practices cannot be continued forever. What the American farmer does or does not do will make or break the beekeeper.

During 1949 I had 150 acres of sweet clover with 100 colonies of

(Continued on page 450)

Bees in Britain

By Frank Buckley, owner of Honeycombe Farm, Brentry, England

This is the sign, surmounted by its gay gilded bee hive, that has lured so many American beekeepers and visitors inside the lane to the Farm. Frank Buckley, owner of the bee farm, is a useful photographer and the sign figures in many movies, some of them in color, about English beekeeping.

It is a common belief that when Americans travel they stick to the "big sights" and Baedeker routes, but I can definitely prove otherwise. My honey farm is right off the beaten track—as far as main roads or guide books are concerned, and the road running past the sign "Honeycombe Farm" is a dead end—except for a tiny local riverside resort not mentioned by Cook's or the American Express. The only other road is a bypass leading to the automobile ferry across the River Severn on the road to Wales.

But dozens of Americans found it last summer. And a lot of them were beekeepers. American beekeeping must be a good thing for its devotees to be able to take a European holiday!

There were two girl cyclists from California—the father of one kept bees in orange groves. And the university girl who was studying entomology and thought my bees "just sweet". And a tall sunbrown Texan who "kinda drifted in" and let me explain all about beekeeping in quite childish terms, to find out later that he ran hundreds of colonies himself and could tell me a thing or two about my own pet specialty—queen rearing.

Mostly though the visitors were a family party doing the country parts of England who were fascinated by my neat rows of hives set in orchards full of fruit blossom, and were glad to take back a present of real English cottage honey to the folks at home, and they were mostly more charmed by the reproduction of a Shakespearean period old English bee garden, complete with bees (English blacks) in tall Pettigrew skeps and full of old fashioned bee plants like lavenda, sweet briar, salvias, limnanthes, thyme, mint, and rosemary, than by the business-like bee farm at the back.

Still, they enjoyed looking at the bees working in the large observation hive, looked over the extracting plant housed in a picturesque chalet on the river bank, and were thrilled to go inside a fine gypsy caravan 50 or 60 years old—The Sara Lee—which must have belonged to the Lee family—kings of gypsies in England years ago—only to see the interior modernized with fa-

Valuable research work has been done at Honeycombe Farm. Frank Buckley is one of the alumni of Bristol University and here are some colonies that are used for reports to the Bee Research Council, of which he is a founder-member. The test hives are English W.B.C. but American single-walled hives used on the farm are seen on the trailer. Note the "Stevenson Screen" where weather records are being recorded by Megan Parry, seen in the picture.

cilities for microscope and queen rearing work inside, but making a comfy home when long days in the bee yard make it too late to return home.

Yes, most of them seemed to enjoy their visit to Honeycombe Farm, and I only hope I shall be able to pay a return call and visit some American beekeepers, if I can manage a visit.

Mostly the visitors, and this applies to others from other parts of the world who know the business, were amazingly generous and keen to help. How have the bees got on during the war? Can you get the stuff you want? Are you doing all right? Can we send you anything you can't get? And they were all genuinely keen to know about methods, marketing, rearing, disease, strains of bees, and all the hundreds of things bee men the world over talk about when they get together, even when the wife is still sitting in the car with her finger on the horn button!

Nothing in England is ever "typical" and I don't suppose a trip around my place gives a representative view of a "British bee farm", but I hope I was able to give our friends a fair view of the business as it now stands.

Honey production is not a major part of my business, although I have a unit of American hives that do very well — although in England there is still a large body of conservative opinion that tells me my brood chambers are too large for the English season. Still I get the honey and if the cost of these hives were not so great, compared with English Standard equipment — for most dealers charge inflated prices for the American hives which they consider non-standard — I should dearly like to set up a hundred or so hives with prolific queens and really develop this side of the business. But with timber being so difficult to get hold of and "in-the-flat" or made-up prices what they are over here this is held up for some time.

Queen rearing does well over

One of the girl assistants on the bee farm engaged in queen rearing operations. This comb, dipped in syrup, is being given to a newly-formed nucleus. Mr. Buckley hopes to visit America, if possible, to study southern queen rearing methods.

here and there is always a good demand for queens, especially when the strain has a popular reputation behind it. I can usually dispose of all queens I breed, and have just received an order, if you please, for 50 **dead** queens, from a well-known English firm of biological suppliers who need them to make up into microscope slides for university and educational work. What a chance to get rid of some old worn out queens! Incidentally this same firm has also ordered 1000 dead workers, 100 drones, 100 larvae, 100 pupae, and a large quantity of eggs. A small but quite a useful sideline.

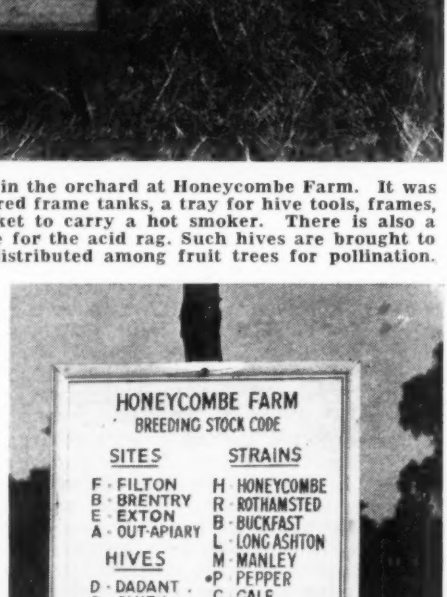
Three or four frame nuclei are the most popular selling units over here for bees. There is no package industry at the moment and I should like very much to visit America and study the package industry there, as I feel it could be greatly extended over here.

Package production would be particularly useful in my own case as at present I have to rear bees on English standard frames for sale, as there is no market on the American size frames I should like to standardize on. This means I must run more than one size of hive at present with all the attendant difficulties of not having everything interchangeable.

Quite a lot of my time is spent in lecturing and there is a new interest over here in the bee as both an educational subject as well as a factor in agriculture. Requests for lectures come from schools where students have set up a bee hive and use it as a project and as a source of material for natural history work. Local Allotment and gardening societies want talks on bees for their members. Young Farmers' Clubs want to know about pollination and are glad to see my films or color slides on orchard work. The University here in Bristol has several departments interested in bees either from an entomological or an agricultural viewpoint and the student societies often book films and a lecturer or send parties to look over the farm. Keen students are often working on their own subjects or giving a hand in harvest time or when we are in need of help. One specialist from the local Agricultural Research Station is using the place for experiments for his thesis for the degree of Ph. D.

Note the useful form of honey barrow in use in the orchard at Honeycombe Farm. It was made from ex-R.A.F. scrap and contains covered frame tanks, a tray for hive tools, frames, vaseline, records and oddments, and a bracket to carry a hot smoker. There is also a container for a large can of syrup and a tube for the acid rag. Such hives are brought to good strength early in the season and are distributed among fruit trees for pollination.

Yes, I suppose we fit in fairly well with the English scene and there is something in the constantly recurring remark of transatlantic visitors that we "don't seem to have moved forward for 1000 years". Well, perhaps it looks like that. But it's grand to see a few old thatched cottages nestling in a sleepy village and there is something incredibly satisfying about a few old skeps of bees behind a lavenda hedge. It doesn't seem to matter that there's a television set in the corner cottage and that we're trying to get hold of a new plastic kit for artificial insemination. English beekeeping goes on, somewhat conservatively perhaps, but a lot of the old 'uns know their beekeeping, and the youngsters are quick to read any decent American work on modern beekeeping if they can get hold of it.



A signboard at the breeding station. Careful recording is carried out throughout the Apiary and an elaborate code of loose letters is used on the hives. The strain of bee known as "Honeycombe" is in great demand in England. Can you work out the "example"?

Bee Sting Therapy for Arthritis and Neuritis

By F. E. Guyton, Alabama Polytechnic Institute, Auburn

Reprinted from Journal of Economic Entomology 40:(4) :469

Many people have heard the statement that bee stings will cure rheumatism. It appears that very little effort has been made in most countries to find out whether or not the statement is true.

In rare instances certain individuals suffering intense pain have induced bees to sting them. Two such cases have come to the writer's attention. The first was a young man who suffered from arthritis of the upper extremities. He obtained employment in a queen yard, and the arthritis was completely cured in one summer's work with bees. Another young man was so badly afflicted with arthritis that he had to drop out of college. In desperation he stripped to the waist, stepped in front of a bee hive, and poked in the entrance with a stick. The bees stung him 38 times. One week after he was stung he was back in college, apparently cured of the arthritis. There are probably innumerable cases such as these throughout the world, yet there is little information available to support the use of bee sting therapy for the above-named diseases and their various modifications.

Review of Early Work.—According to Bodog F. Beck, M. D., in his book "Bee Venom Therapy", many European laymen and a few physicians believe that bee stings are a cure for arthritis, rheumatism and neuritis. It seems that Philip Terc, a noted practitioner of Marbury, Austria, was the most outstanding champion of bee venom therapy in Europe. Dr. Terc suffered from an obstinate case of rheumatism. He was accidentally stung by a number of bees, after which the rheumatism disappeared. In 1879 he treated a lady for neuralgia. He administered 90 bee stings to her head without noting any improvement. He applied 15 more to her neck and shoulders, after which her pains suddenly left her. It is reported that she was permanently cured. Terc finally devoted all of his practice to bee sting therapy. He was convinced that almost all true arthritis and rheumatism can be radically and permanently cured with bee stings except where ossification has taken place. In 1889 Terc gave a lecture on his specialization before the Medical Society at the Imperial University of Vienna. The lecture was poorly received but Terc continued to practice bee sting therapy successfully over a period of 40 years. His treatments varied from a few stings in early, light cases to 150 to 200 stings per day in acute or chronic cases. In 1902 Terc started treating a young lady who was suffering from arthritis deformans. The joints of her extremities were swollen and stiff; she had been bedfast for most of two years. The treatment started in March, and by November she had received 5,600 stings. At this time the patient had improved considerably. By the following September she was free of pain, was in good physical condition, and could walk for hours. She received further treatments at intervals for four years. In all she received 15,000 stings and was permanently cured. This is an example of an extreme case. Many cases were cured with a few stings. In 1912 Terc's son, a noted eye surgeon, published the results of 660 cases of arthritis and related forms that his father had treated with bee stings. Results: cured 554, improved 99, unimproved 17.

In the United States, relatively few physicians have used bee venom or living bees for arthritis treatment. The late Dr. Bodog F. Beck of New York City was the leading exponent of bee therapy in this country. He claimed to be successful in 80 percent of his cases. Until 1933 he used prepared venom; later he used living bees.

Procedure. — The experiments conducted by the writer in applying bee stings for varying arthritic conditions have been few but interesting. Before treatments were begun each patient was required to have a thorough examination by the family physician or specialist, and have the physician make a request for the treatment. The first treatment consisted of a test sting in order that the patient's reaction could be observed. Regular treatment was begun if there were no unusual reac-

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tions to the test sting. The stings were placed on the affected area and allowed to remain imbedded for 3 to 5 minutes. The bees were handled with forceps, and the stings were removed with forceps. Applications of stings were made at 3- or 4-day intervals.

Treatment and Results.—Case No. I, male, 45 years of age. This patient had arthritis of the right knee. The knee was painful, stiff, and could not be fully flexed. The condition had been acute for about 2 weeks. Symptomatic pains had existed intermittently for over a year. A treatment of 3 stings was applied to the knee May 1, 1945. Within 2 days all pain and stiffness had left the treated knee.

Within a week arthritis appeared in the patient's right wrist. One treatment of 8 stings was applied to the wrist. All arthritis disappeared in 3 days.

Six months later an arthritic condition developed in the left shoulder and arm. The pain was of the dull, aching type. An occasional sting in the shoulder gave temporary relief. This condition persisted until September, when the patient received 40 to 50 stings on each hand and wrist while working with an infuriated colony of bees. Within 10 days the pains had completely disappeared and have not returned to this time.

Case No. II male, 28 years of age. This young man had suffered from arthritis for 10 years. His case had been diagnosed by many specialists throughout the eastern United States as arthritis. It was said to be non-syphilitic and non-gonorrheal. He had been treated by many specialists with practically no relief. Both knees were swollen and painful. His neck was stiff, and his neck and left side of his back were painful. The toes of both feet were considered by his doctor to be too badly ossified for treatment. One toe had been amputated. These conditions caused him to wear knitted supports around each knee and around his back. For the past 2 years he had taken an average of 10 aspirins per day, and was taking 30 aspirins per day when the treatment began. This case was taken on the written request of his physician.

This first treatment was given July 20, 1942. Additional treatments were given twice a week until July 14, 1943. During this period 502 stings were administered with never more than 18 stings per treatment. The stings were applied to each knee, to the back, and to the neck. The only reaction shown to the first stings was a slight redness for a radius of 3 inches from the area of sting contact. On July 24 signs of improvement were distinct, and by July 27 the larger of the two knees was practically normal. The other knee was only slightly swollen by this time. On August 12 the knitted knee bandages were discarded. The stings were now producing more inflammation than formerly. There was some arthritic swelling in the knees on September 21; more than at any time since the first few treatments. The patient called it a minor flare-up compared to what regularly took place practically each week before the treatments began. Due to his traveling, the patient had received only three treatments in those last three weeks. Additional treatments and observations were made as follows:

October 9, began treating neck; knees and back were much improved. There was no swelling in knees and only an occasional pain; much less pain in back.

November 13, first treatment in 2 weeks; general physical tone of patient much improved. Practically no swelling in knees and much less pain in back and neck.

December 19, patient reported no pain in neck and knees but some in back. There was practically no swelling in knees.

January 14, doctor examined knees, pronounced them within 2 percent of normal and said, "They can never be nearer normal than that." Stiffness was leaving neck.

February 20, knees seemed to be normal, back better. Practically no pain in neck.

May 1, first treatment since February 20. Swelling of left knee occurred between treatments; lasted 2 days. Neck was much improved. Still pains in back. More pains in knees than when treatments were regular. Sixteen stings were given at this treatment. Within 30 minutes after treatment there was a slight itching and reddening of the hands, the first signs of supersensitiveness.

June 15, six stings were given;

palms of hands turned red and itched.

July 7, six stings were given; supersensitive signs appeared on hands in 15 minutes.

July 14, eight stings were given; supersensitive signs appeared within 4 minutes after treatment. In 15 to 20 minutes the patient's face was red and he said that his nose felt very large. He was sent to a hospital where adrenalin was given. Within 2 hours relief was experienced. The patient was relieved from pain in back the night of treatment, whereas relief normally did not occur until 2 days after treatment.

No further treatments were given this patient due to his developed allergy or supersensitiveness. The patient moved to another state and has not been heard from since.

This case was an extreme type. For 10 years the patient had chronic arthritis with acute flare-ups almost weekly. Bee stings greatly improved the arthritic and general condition of the patient. He had gained weight, his eyes were brighter, he walked better, assumed a straighter posture, and suffered little pain in comparison to pre-treatment. He had quit using aspirin, whereas he was taking 30 aspirin tablets per day before treatment began. He might have been completely cured had it been possible to have finished the treatments.

Case No. III female, 36 years of age. This patient had arthritis of the right shoulder and elbow. It was an acute case of about 10 days duration. The patient had not been able to sleep for several nights due to severe pains in the right shoulder and elbow. On January 4, 1943, one sting was applied to the afflicted shoulder and one to the inner surface of the elbow. The swelling and inflammation from the sting at the elbow spread almost to the hand. Soreness and swelling lasted about a week. The subject received relief from arthritic pain the first night and was able to sleep. All arthritic pain disappeared within 2 days. Some soreness and swelling from the sting persisted in the shoulder and forearm for about a week. On February 18, 1944, arthritis recurred in the same shoulder. The attack was much more severe than the first one. Dull aches and pains had occurred for 2 weeks. The general physical condition of the subject was adversely affected. She had lost her appetite and her mental attitude was extremely low. Finally she was unable to move the arm. It was then placed in a sling. Two stings were administered to the shoulder February 18. The shoulder and arm were normal in 3 days. There has been no recurrence of the arthritis to date.

Case No. IV, female, 63 years of age. This case was diagnosed by the patient's doctor as neuritis. The duration had been for over a year. The left shoulder was so severely afflicted with pain that the subject was not able to sleep well. Many nights she had to sit up in bed due to the severity of pain. Treatments by her physician had given no relief. On July 7, 1943, two stings were applied to her upper arm near the shoulder joint. There was practically no visible reaction to the stings. The subject complained of receiving no relief the first night after the stings were given. July 8, five stings were given on the upper arm. By that night the patient's arm was practically free from pain for the first time in a year. On July 10, 6 stings were applied to the upper arm. The patient is completely relieved of all pain in the treated arm and has had no recurrence to date.

Case No. V, female, 30 years of age. The fingers, hands, knees, ankles and feet of this subject were affected by arthritis. There was rather severe pain and swelling in the various afflicted parts. The case was of about four months duration. The subject had been treated by a specialist and later by a general practitioner. The sting treatments were requested by her attending physician.

This case offered an opportunity to run checks on the experiment. It was agreeable with the patient to treat the worst swollen knee and finger, leaving the other knee and fingers as checks. Test stings were given on the right knee August 3, 1943. The next day the patient reported less pain, a reduction of swelling, and freer action in the treated knee. On the following day, August 5, 3 stings were given the right knee and 1 sting to the middle finger of the right hand. By August 10 the treated hand and knee were much improved. There was less pain, less swelling, and the patient

had much better use of the treated parts. By September 5 the treated knee was almost normal, while the untreated knee was still painful. The patient asked that the knee used for check be treated also. It was given 3 stings. Severe itching developed from the stings, so it was decided to discontinue treatments. A total of 30 stings were administered to this patient. The treated parts showed much improvement over the checks. The patient said she favored the untreated hand and knee in her work. This lady has since been to special clinics and as of November 15, 1946, the arthritic condition still exists.

Case No. VI, female, 50 years of age. This case was diagnosed as arthritis by two specialists who claimed they could not help her. The arthritis started in her feet and spread to her hands, fingers, knees, shoulders, ankles, and arms in a period of about 3 years. The joints of the appendages were swollen and painful. Muscles of the arms and legs were painful. Four treatments were given this patient, the first on September 12 and the last on September 30. A total of 30 stings were administered. There was an effort made to use checks on this experiment, but as soon as the treated parts showed improvement, the patient would ask that the remaining untreated parts be treated. The treatments showed great promise of effecting a cure, but severe itching of treated areas developed and treatments were discontinued.

Summary.—According to reports, Dr. Philip Terc of Austria successfully treated arthritic and rheumatic patients with bee stings over a period of 40 years.

The writer treated six patients with bee stings for arthritis or neuritis. One patient was treated for three different occurrences of arthritis. One patient was treated for two different occurrences in the same arm. A year intervened between the first and second occurrence.

Three of the six cases treated experienced complete recovery with the application of from 2 to 16 stings.

The 10-year chronic case with acute flare-ups was given 502 stings over a period of 1 year. He experienced great benefits from the treatment but was not cured. All cases treated showed improved conditions. Three cases out of six developed supersensitiveness to bee stings.

It is difficult to run checks (untreated parts) on human beings. As soon as the treated part shows improvement and less pain they plead for the checks to be treated. It is the writer's belief that the supersensitiveness developed in three of the cases was due to faulty technique of applying the stings.—4-18-47.

You Can't Fool the Bees

By Llewellyn Chapman, Jr., Chattanooga, Tennessee

The following experience happened to me last year when I attempted to take the honey out of my hive or as the country people call it "rob the hive".

Last fall on one sunny afternoon I thought I would take some honey off my hive. I looked in the hive and found that the bees had not left the honey, and the frames were covered with bees as well as filled with honey. I thought that I could set the super on the ground beside the hive, and the bees would leave the super and return to the hive. I set the super off and then went into the house to wait until dark, and then I would go out and get the super. When I went out to get the super, it was completely empty of bees and honey. The bees had taken all of the honey from the super back into the hive, not leaving a drop in the super. As I am only a beginner, I didn't know the bees would do this, but I certainly found out the bees meant to keep the honey as much as I meant to get it.

What's in a Name?

By Allen Latham, Norwichtown, Connecticut

On pages 280 to 284 in the May number of Gleanings is an article entitled "The Story of a Colony Destroyed by Wax Moth". Two years ago an article by me was refused by the editor of a bee journal because I called this so-called wax moth the pollen moth.

I have had a great deal of experience in my 66 years with the bees with the work of this enemy of the bees, and my study of the moth and its larvae, to believe that the insect was given the wrong name. To call it either bee moth or wax moth is to suggest that it lives either upon bees or wax.

In the article in Gleanings, with its excellent pictures of the mutilated home of the bees, the statement may be found, "There were only a few cells of pollen **left untouched.**"

It is true that the caterpillar of this moth will eat the old comb rich in cocoons of bee larvae and will grow fat upon pollen. They will die if they have wax alone to eat. Anyone can drop a few of the castings of the caterpillars upon a hot stove and they will at once see melted wax creep out on the stove lid. The larvae of this moth are not worms. Worms are animal forms that undergo no transformations. They are the same in youth as in maturity. Though the caterpillars of the "wax moth" are naked they are not worms, but true caterpillars.

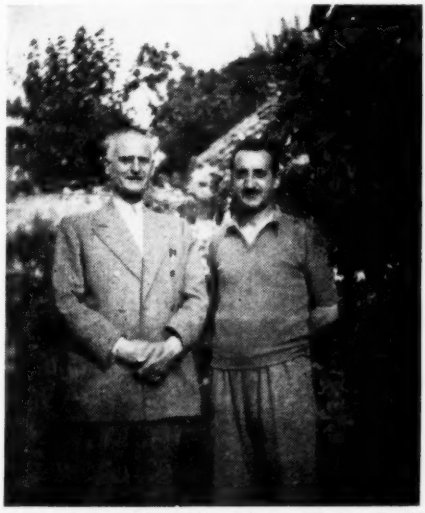
Anyone who has studied this moth must have found that in its larval form it is never large and fat unless there is an abundance of pollen in the combs, and when the combs are new the larvae are small and stunted, being half starved.

Some time way back in life upon this earth there is little doubt in my mind that the bee was not troubled with this enemy. This moth and the larvae must have lived elsewhere than in the hive. I am strongly of the opinion that somewhere on the earth it may still live otherwise than upon combs and refuse in a bee hive. My little knowledge of the banana has led me to think that ages ago this moth laid her eggs not in bee hives but upon the abundant staminate blossoms of the banana, and that somewhere in the tropics her larvae may still be found, if not on banana blossoms, upon some plant yielding a lot of pollen. The blossom cluster of the banana has a prolonged life and the rapid-growing larvae of the pollen moth would have ample time to mature.

This moth lays very small eggs. It is not unlikely that bees gathering pollen off the banana bloom might get an egg as well as pollen grains, and taking that load home that egg might hatch in the hive and feed there. A few such eggs might hatch and the larvae live to maturity. Thus as time went on the moth would gradually make the bee hive her home.

If my reader will look carefully at the picture on page 282 he will note that the sheets of foundation in the sections are almost intact. In other words—the caterpillars have left them uneaten because they are not the young of the wax moths but the young of the original pollen moths. Bee moth is not so inappropriate as wax moth although it does not feed entirely upon comb and bee refuse. The lesser bee moth does to a large extent.

Some entomologist may have opportunity to study flora in the tropical regions and stumble upon this insect at work upon some plant, and thus find that this moth may still be found living upon a plant.



Mr. G. Muzzati (left) and Dr. U. De Berti (right), Editor of "Voce Apistica", Milan, Italy.

A stack of supers with the gripping device in position for carrying

Ramp Loading Elevator for Apiary Work

By E. Smellie

Taken from New Zealand Journal of Agriculture, March, 1949

In apiaries which are essentially one-man units and where active labor is not available continuously, the manual work of loading and unloading hives and other heavy equipment has always called for relief. Many mechanical aids have been devised and are in use with varying degrees of success. The latest contribution to the long list of such inventions is a ramp loading elevator devised by E. B. Diehl of Waiau, North Canterbury, and described in this article by E. Smellie, Apiary Instructor, Department of Agriculture at Christchurch, New Zealand.

The appliance can be used both in outapiaries and in honey extracting and packing rooms, loads of up to 560 pounds being handled with ease. The most convenient position on a motor truck for its transport is usually under the deck between the main chassis bearers.

The apparatus is part of a system designed to eliminate heavy lifting in the gathering of honey crops, shifting of bees, or loading of packed honey onto trucks. Other appliances used in conjunction with the ramp are a honey house bogie (described in the May 1945 issue of the "Journal"), a number of wooden stands for use with the bogie, and a gripping device for carrying stacked supers.

Using the Elevator

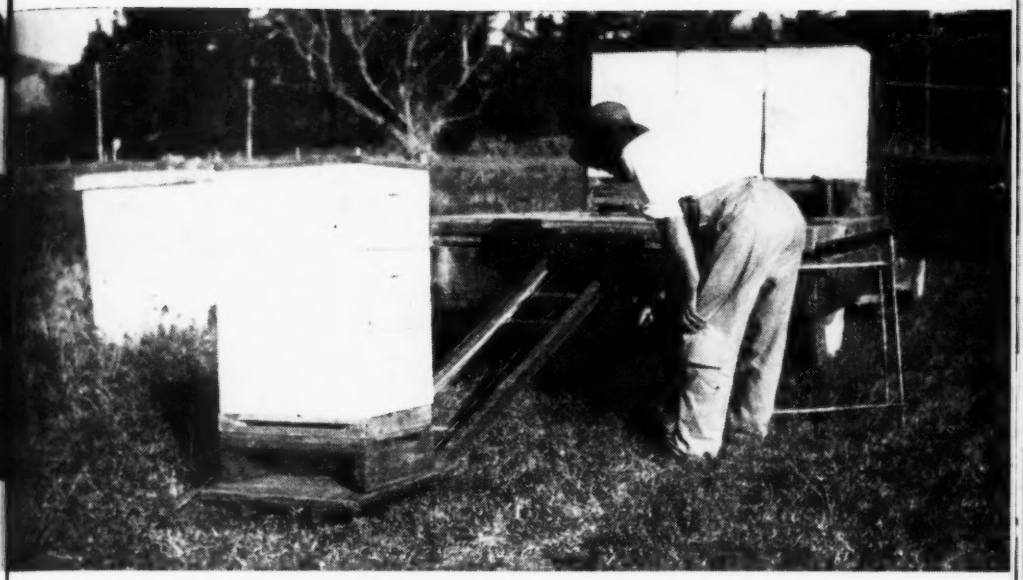
When honey is to be taken off, either by using escapes or by shaking, a stand with a drip tray on it is placed on the ground in a convenient position. As the honey is removed from the hives, up to four supers are placed on the stand and covered with an escape board or a bee-tight lid. This pile is then left and a second is made on another stand, the process being repeated until all hives have been dealt with.

The platform of the ramp elevator is lowered to the lowest position and a stand with its load of stacked supers is picked up with the lifter, carried to the ramp, and placed on the platform. When assistance is not available for carrying these stacks, each stack can be assembled directly on the platform.

The winch is operated to raise the loaded platform to deck level. A friction brake holds the platform in position while the stand and its load are lifted by the bogie and wheeled into a position on the truck deck. When all the supers have been loaded a tarpaulin should be used to cover and fasten the load securely.

Unloading is a reversal of the process. When the truck can be backed into a dock where the deck is level with the floor the bogie alone can be used to transfer the load to the honey house or warming room.

If it is desired to warm the honey before extracting it, some means of ventilation at the bottom of each stack of supers is advisable. This can be provided by cutting large



The stack on the platform ready to be raised by winch to the level of the truck deck

windows in the sides and ends of a half super or similar frame, screening them, and placing this box on the drip tray before assembling the stacks at the apiary.

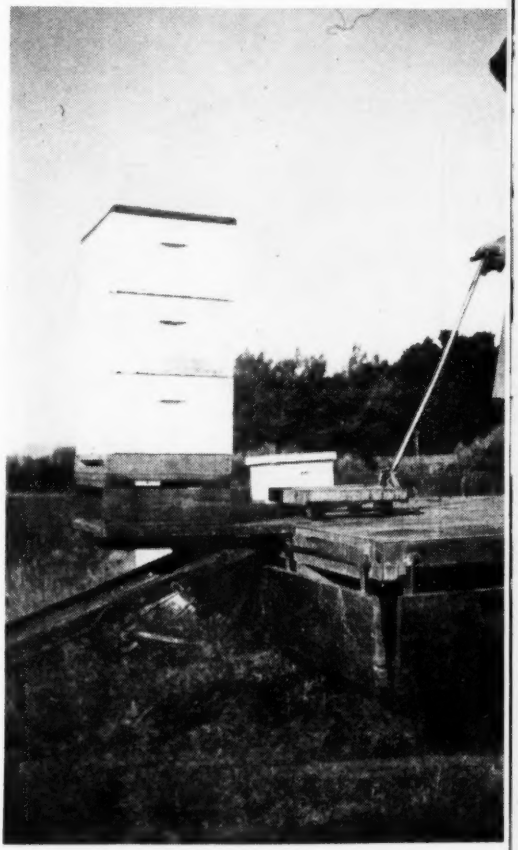
By having all bottom boards built onto runners which will allow the bogie to be used, it is possible to shift hives of bees quite easily when working alone. If any standard method of fastening the supers and bottom boards together is adopted, the ramp elevator and bogie act in the same way as for honey supers.

Cased cartons or tins of honey stacked on the platform stands can be readily moved about the store or on the truck by using the bogie. If the ramp elevator is used to raise these from the floor to truck level, the work of out-loading is expedited greatly.

Construction of Ramp

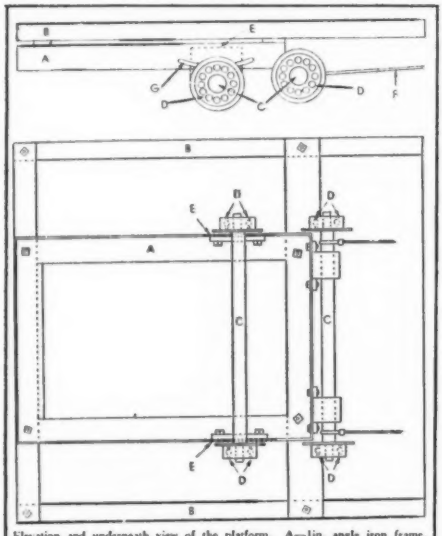
Two chassis irons from a Model T Ford or other similar channelling form the rails of the ramp. They are spaced with two pieces of five-eighths-inch water pipe (A), through which one-half-inch bolts pass from side to side (see diagram).

The winding gear (B) is mounted beneath the chassis irons and consists of a shaft and detachable handle. (An old wringer roller with the rubber removed and replaced



When raised to the level of the deck the hives are moved to a small truck to be placed in desired position.

The stacks of supers are easily wheeled into place on floor of truck



Elevation and underneath view of the platform. A—1in. angle iron frame. B—Angle iron supporting wooden deck. C—1in. shafting. D—2in. ball races with 1in. centres. E—Metal plates on which rear axle is mounted. F—Cables. G—Adjusting slots for rear axle.

with one-inch water pipe is ideal.)

The friction brake has a V-belt pulley (E) mounted on a projecting end of the winding shaft. A piece of sash cord with one end secured firmly to a stud is carried around the pulley and fastened with a tension spring to the end of the chassis. A small brake lever, mounted on a shaft (C), is used to extend the spring and slacken the cord sufficiently to allow the winch to unwind and lower a load.

Two pulleys (D), mounted on a one-half-inch steel bar slide to allow correct alignment of the lifting cables (F).

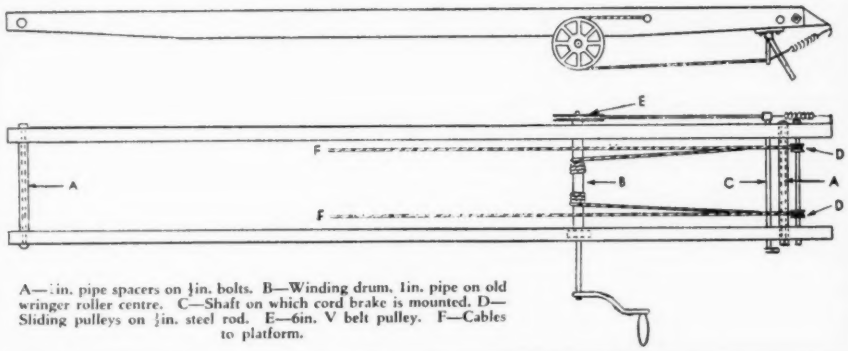
The Platform

An angle iron frame (A) supports the platform (B), and four ball races (D) on three-fourths-inch shafting (C) are used as wheels (see diagram). These wheels run two above and two below the top flange of the ramp chassis. The rear shaft is made adjustable so that the platform may be kept level. The large flanges on the insides of the ball races prevent the wheels from slipping out of line during lifting.

The front axle is fixed, and the rear one is mounted on metal plates which can be moved in curved slots in the chassis (G) to allow adjustment of the wheels.

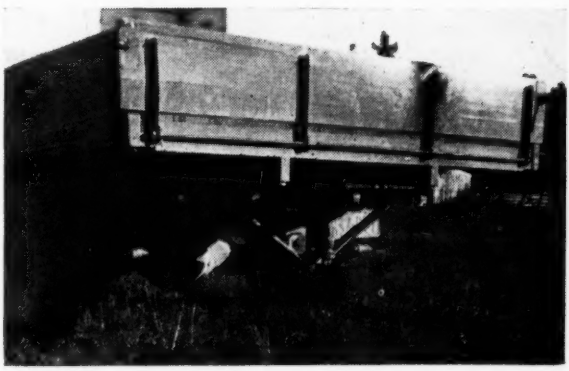
Light steel cables (F) are used for raising and lowering the platform.

ELEVATION AND PLAN OF RAMP



A—1in. pipe spacers on ½in. bolts. B—Winding drum, 1in. pipe on old wringer roller centre. C—Shaft on which cord brake is mounted. D—Sliding pulleys on ½in. steel rod. E—6in. V belt pulley. F—Cables to platform.

The most convenient place for the transport of the ramp is usually under the deck of the truck. This puts the apparatus out of the way and it is always convenient to use again when needed.



With the gate raised the hives are ready for transportation to another apiary. A solidly made tail gate is essential, especially when the roads are rough.

Bees Will be Bees

By Lester V. Bratton, Columbus, Ohio

I was born in southwestern Wisconsin where bees were plentiful and honey on everybody's table was as natural as bread and butter, so I thought as I grew up. But now!

Now I am a grandpa and have traveled far and wide and as the war clouds were hanging over us I suddenly found myself and wife located in dear old Boston.

Here I was in the cultural center of the U. S. A. and my thoughts went back over the stories I had read and been told of staid old New England.

I did a lot of thinking and the more thinking I did the more determined I became that I would show up some of those old timers who did things today just as did their great-great-grandparents in the days of long ago.

So! I bought an old farm and orchard in Southern New Hampshire and went up weekends until I made it livable. What I did to the old house and orchard would fill a book so let's just talk about the bees now and write the book later.

I Order Some Package Bees

I ordered 15 hive bodies and everything to go with them including five tops and bottoms and two 3-pound packages of bees to be sent to me by May 15th which would be apple-blossom time in my small orchard.

Well, the bees were sent to me April 15th by mistake and the weather was cold and damp but I dumped the bees in and opened up the queens and each one fell in among the bees and for a day or two it turned warm and I thought I was in the bee business.

Then the rain came in earnest and by the end of three weeks most of the bees were being dumped over the alighting board and the few remaining live ones would stand on the alighting board and shiver and shake. I decided this must be Nosema.

I wrote the company which sent the bees and told them that one hive was about all dead so they sent me another package and by the time the new bees came the other hive was also about all dead, but I did not write them again. To say the least I was somewhat discouraged.

A fine article appeared in one of the bee magazines about putting bees in a two-body hive at the start. I am of the belief that one hive body is better, especially when one has no full drawn combs to use and when the bees have the combs partly drawn and the queen is working satisfactorily, then put on the second body and she will stay down until she gets the bottom filled.

In my above experience the bees in each hive went to the top body even though I fed them through the opening at the bottom. My conclusion is that they went to the top hive to try to keep warm.

That was a bad year all around and my one hive of bees was winter killed for lack of food.

Next spring I got two new 3-pound packages but it rained all through the fruit bloom and then turned dry most all summer and the bees got very little supplies. They barely pulled through the winter and were so weak they did not amount to much.

Three times and out, but not me. I wasn't going to let any of my New England friends laugh at me. I would be successful or know the reason why. So far I could see good reasons why I had failed.

And then my luck changed. The express man called me from town (I lived 13 miles in the country) and said, "Do you want another swarm of bees?" I said, "Sure, where are they?". He said, "Out at my home on a small apple tree. My wife's brother got them at the University of New Hampshire from Prof. J. R. Hepler last year. **These are aducated bees."**

I read the book on how to take a swarm and all I can say is that practice makes perfect. (I have had no practice so far.)

I had on my veil and gloves and put the hive body on a stepladder directly under the swarm, and shook. The limb was stiffer than I expected and only half the bees came off and half of them went on the ground.

By this time it was getting dark so I put on the cover and wait-

ed a while and then took the hive home with me. What I should have done was to have left the hive there until the next day.

The next morning the bees were crawling all over the hive and up on the side of the barn so I did a little horse-sense reasoning and figured that I had lost the queen.

Just about this time I got another call from the express man and he said, "Do you want another swarm of bees? This time they are high up in the big apple tree."

I looked up and did some thinking. I got a 20-foot ladder up with just three inches sticking above the limb, took my pruning shears up, cut off one small limb. A lot of bees fell off but slowly went onto the cluster. Then I cut off the other two limbs holding the cluster, and held them out in the open and in no time at all the bees were all on tight, so down I came just perfectly. I gave the bees a real jounce and practically all of them fell inside the hive.

Away we go home to put this on top of the one I got the day before and soon all the crawling bees on the barn were going in. Then I knew I surely had the queen.

You see it is really very simple when you **know how** but the big question is, as I shall relate later on, when do you **know** that you **know how?**

One editor recently wrote that it may take 20 years to learn how to successfully handle bees. I dare say that the first seven years are the hardest but don't be discouraged, dear readers—you can have a lot of fun and entertainment out of handling bees, and even profit too.

Right here let me say this: When you are discouraged with the world about you and things seem to go wrong, just go out and lie prone on the grass slightly to the side of the hive and watch them coming in and going out. **Don't** get in line of flight and make no fast movements and you will be perfectly safe.

If it is a warm day you will notice the air conditioning crew hard at work at the entrance fanning their wings and holding on for dear life while the incoming loaded bees land on top of them and crawl all over them as they go into the hive.

There are so many interesting things to watch that you will marvel at what you see.

Perhaps a stray bee may land, but like a flash the guards are out in front and the stranger is quickly driven away.

Bees just keep on working day after day, every day, Sundays and holidays alike, and no short eight-hour days, either.

Like Old Man River, they just keep working and working along.

I once said to one of my Boston friends, who also keeps bees, "My bees know me and know I am boss." He gazed at me with a most horrified look and said, "My dear friend, get that idea out of your head or some day you will be sorry, I promise you."

Well one day I was checking over my hives—I now had four colonies—and had on my bee veil and gloves but had not bothered to light up my smoker. I had on low shoes so had tied a string around each ankle to hold my trouser legs in closely.

Well!! Again, I surely learned something that day. Sometimes even bees have an **off day** and this was it. Such days are very rare and my advice is: **leave them alone until the next day.**

As I took off the cover of the first colony a couple of bees came out and said **"Zeeee!"** in a very high pitch and by the time I had lifted off the top hive body the air was full of bees all saying, "Zeeee", but I hurriedly lifted off the second body and took a look and then put the bodies back on as before.

Then as I went to the next colony about 15 feet away, some of the first bees followed me and flew in front of the second colony and said, "Zeeee", and in no time flat the air was full of "Zeeees" but I was **boss,** you know, and kept right on taking the second colony apart.

By now things were getting lively. As I bent over the hive one of the strings on my ankle came untied and that opened up a new chapter in my bee lessons.

I put the hive bodies together as quickly as possible and made a bee-line for the barn with about 1000 bees all trying to head me off, but I made it and found a dark corner and soon all were gone except the 50, more or less, which had crawled up my leg and stung me to their hearts' content.

Strange as it may seem, I learned

(Continued on page 449)

University of Wisconsin Aids Beekeepers

The pictures on these two pages taken by H. H. Root in October, 1949, illustrate some of the experimental work on bees and queens being done at the University of Wisconsin, Madison, under the direction of Dr. C. L. Farrar.

No. 1—A few hives in the 50-colony apiary at the University Hill Farm where most of the bees are used for bee breeding, including queen rearing and maintenance of breeding stock. Seven of the colonies shown have been equipped with pollen traps during the summer to provide pollen for supplemental feeding of 350 colonies used for research.

No. 2—William C. Roberts demonstrates the artificial insemination equipment used for controlled bee breeding.

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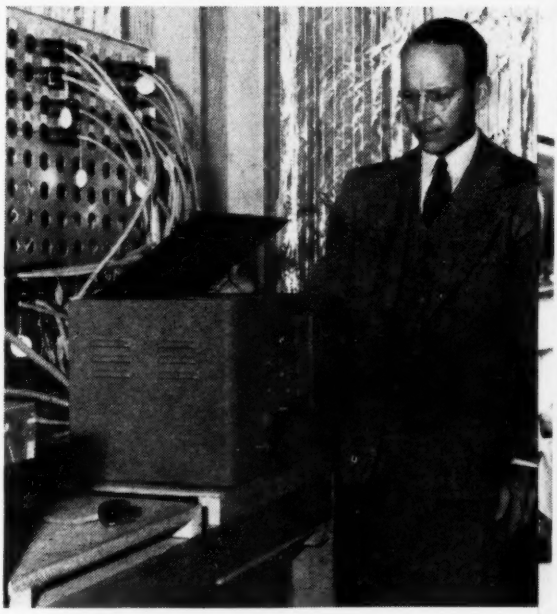
No. 3—A 16-point potentiometer accurately records the temperatures of 1600 thermocouples distributed in 12 colonies. The Division of Farm Electrification, BPIS&AE, and the Wisconsin University Department of Agricultural Engineering are cooperating with the Madison laboratory in a study of heating equipment and other fundamental studies on the behavior of bees in relation to their environment. C. E. Owens is in charge of the engineering phase of the project.



No. 4—An automatic switch built by the cooperating engineers provides for continuous or intermittent recording of from 16 to 320 temperatures on the potentiometer charts (3). By shifting the switch plugs in the panel, any selection of thermocouples can be used for automatic record or the temperatures on all 1600 thermocouples can be scanned at any time in less than 3 hours. Only half of the 100 thermocouple plugs had been mounted in the panel when this picture was taken.

No. 5—Part of the colonies used in the hive heating investigations before final installations of equipment were made. The two tall colonies in the rear had 80 thermocouples in each of four brood chambers and 16 in each of four supers, making a total of 368 per colony. These colonies were used for behavior studies under summer conditions.

FRONT COVER PAGE

C. L. Farrar opened the 3-story standard hive at the end of the row shown in (1) on October 4, 1949. Approximately 60 percent of the station's hive equipment is the shallow-square hive using 6¼-inch frames, the remainder being the standard 10-frame.

XUM

The beekeepers assembled on The A. I. Root Co. grounds are addressed by Dr. E. E. King.

Cuyahoga County Beekeepers' Assn. Guests of Root Co.

The Cuyahoga County (Ohio) Beekeepers' Association meeting was held on May 28, 1950, at Medina, Ohio. The weather man was kind to those in attendance in that he ordered a perfect day for an outdoor program. And what a wonderful crowd—almost 300 people from all walks of life—most of them beekeepers.

Dr. E. R. Root

It should be said—with all respect to other county beekeepers' associations, that Cuyahoga County with its almost 4000 hives of bees is one of the most outstanding county associations in the country. It is not uncommon to have an attendance of 200 at a regular meeting.

Dr. E. E. King, president, was fortunate in securing Miss Hazel Henderson of Cleveland, a well-known harpist, to render some musical numbers which were enjoyed by all.

Miss Hazel Henderson, Harpist

S. E. Bailey, State Apiarist

Dr. E. E. King, President

Geo. Seidel

Dr. E. R. Root, on being presented, gave some of the early history of beekeeping, not only in Ohio but throughout the nation. Dr. Root has had a long experience in our industry and is optimistic about the future. He spoke highly of the valuable work being done by the American Honey Institute.

Eliza Beam of Strongsville, Ohio, whose poems have appeared in The Beekeepers Magazine, favored the audience with a few of her choice bits of verse relating to bees and beekeeping.

S. E. Bailey, state apiarist of Ohio, reviewed briefly the history of inspection work throughout the state. At one time AFB was very prevalent in many counties. Because of eternal vigilance on the part of state inspectors and the fine cooperation of beekeepers, the percent of disease in Cuyahoga County is only 0.7 percent which is seven-tenths of one percent of 3921 colonies inspected in 1949. The percent of disease in Ohio for 1949 was only 2.34 percent.

Mrs. Marriett M. Grace, Director of American Honey Institute

George Seidel of Strongsville, deputy inspector, deserves much credit for helping to keep the county clean.

Mrs. Harriett M. Grace, director of the American Honey Institute at Madison, Wisconsin, the main pseaker, held the interest of her listeners with an account of the many ways in which the Institute is publicizing the virtues of honey and working for beekeepers throughout the country. The story of honey, when properly told, is so intriguing that people will actually stop and listen. Mrs. Grace, in referring to **Post's Sugar Crisp,** coated with sugar and

(Continued on page 453)

A hive of white bees

If You are Celebrating

By Mrs. Benj. Nielsen

Gold honey stars and flag honey wafers.—Photo courtesy Kellogg Co.

Whether you are planning on a trip or staying at home "in the shade of the old apple tree", to celebrate Independence Day, there must be food.

So be sure to have plenty of honey-sweetened lemonade—it's a real thirst quencher. And for a holiday touch, cut small stars from the top crust of your honey-way deep dish apple pie. Steam can escape and juices bubble through stars just as through ordinary slits or "goose tracks". If you really want to go all out, serve it a la mode with honey vanilla ice cream!

Gold Honey Stars

One-half cup shortening, ⅔ cup honey, 1 egg, ½ cup whole bran, 3 cups flour, 3½ teaspoons baking powder, ¾ teaspoon salt, ¼ cup orange juice, and 1 teaspoon grated orange rind.

Blend shortening and honey together thoroughly. Add egg and beat well. Add bran. Sift flour, baking powder, and salt together; add to first mixture alternately with orange juice and rind. Chill. Roll out dough to about ⅛-inch thickness, working with a small amount at a time and keeping remainder chilled. Cut with floured, star cookie cutter. Bake on ungreased baking sheet in moderately hot oven, 400 degrees F., 10 to 12 minutes. Yield: 4 dozen 2¼-inch diameter.

Flag Honey Wafers

One-half cup butter, ½ cup honey, ½ cup ready-to-eat bran, 2 cups sifted flour, 1 teaspoon soda, ½ teaspoon cinnamon, ¼ teaspoon cloves, ¼ teaspoon allspice.

Blend butter with honey; beat until creamy. Crush bran slightly; add to first mixture with sifted dry ingredients. Mix thoroughly; chill. Roll dough thin on floured board. Cut with knife in rectangular shapes about 1¼ x 2½ inches. Bake on ungreased cookie sheets in moderately hot oven, 425 degrees F., about 10 minutes. Decorate with uncooked frosting to represent flag. Yield: About 2½ dozen.

Deep Dish Honey Apple Pie

Six cups sliced sour apples, ¾ cup honey, 1 tablespoon lemon juice, ¼ teaspoon lemon rind, ¼ teaspoon salt, ¼ teaspoon cinnamon, and 1 tablespoon butter.

Line sides of deep baking dish with pastry, allowing ¾-inch hangover at top for fluting. Arrange apples in baking dish. Mix honey, lemon juice, lemon rind, salt, and cinnamon; pour over apples. Dot with butter. Adjust star-dotted top crust, flute edges as usual. Bake in moderately hot oven, 425 degrees F., 12 minutes, reduce heat to 350 degrees, and bake 30 minutes.

Quick Honey Butterhorns

Two cups sifted flour, 2 teaspoons baking powder, 1 teaspoon salt, ½ teaspoon cinnamon, ⅔ to ¾ cup milk, 1 tablespoon melted butter, 4 tablespoons shortening, 2 tablespoons honey, 2 tablespoons grated orange rind, and egg yolk.

Sift flour, baking powder, and salt. Cut or rub in shortening. Add milk and stir to form a soft dough. Turn out on lightly floured board and knead one-half minute. Divide dough into two equal parts. Roll each out into circular shape about ¼ inch thick. Brush with melted butter and honey. Sprinkle with cinnamon. Cut into pie-shaped pieces. Roll up, beginning at the wide end. Brush with egg yolk mixed with water. Sprinkle tops with grated orange rind. Bake 10 to 12 minutes in a hot oven, 450 degrees.

Second Glances

By C. M. Isaacson

Two-queen systems are many and varied. Mr. Albrecht's has the advantage of being simpler than most and requiring little extra equipment—merely a specially built bottom board (page 337). And a larger crop with less labor is surely desirable. There is also insurance against loss of a crop through queen failure, as it would be seldom that both would fail at once. It is worth trying if, as the editor says, one has a permanent location.

Moving without screening is far preferable under most conditions—especially with short hauls (page 339). The truck movement quiets bees, and if one unloads quickly at the destination he will be bothered little with bees flying. They will more naturally and quickly locate themselves also if moved unscreened—I have seen pollen carriers come in within an hour after unloading. But if your load is high, tie down your covers or nail them—any not glued firmly will blow off otherwise. And if beekeepers are going to give satisfaction with their pollination services, Mr. Watkins' mention of using **strong** colonies is one to keep in mind. They have the field bees to do the job.

Good queens should result from Mr. Bain's hive and system which enable cells to be finished in strong queenright colonies (in queenless portions, of course). With many nurse bees already actively engaged in feeding larvae there should be no inferior queens from lack of food. And that diluted honey is the best food to feed cell builders should certainly be true. The whole system seems both practical and efficient (page 341).

Dry sugar feeding is a success in J. H. Sturdevant's experience (page 345)—especially when fed on the bottom board, he reports. That is true—it is preferable to syrup as far as my own apiaries go. When feeding in early spring, however, one must make sure the cluster is in contact with the sugar — for instance, a small colony in the upper story of a two-story hive may be prevented by cold weather from reaching the food. With strong colonies it works perfectly, with less waste, and, in my opinion, produces more and evener brood than syrup.

The interest of beekeeping can take one out of the worry and strain of day-to-day living, as Mrs. Linden found out during the war years. No, it was not so absurd, watching the bees flying can likewise take one's thoughts afield and ease a tired mind. We all of us need to make use of this "return" from beekeeping more than we do (page 346).

That screen wire smoker fireproofing is just a small item in the telling (page 348) but if it prevents even one costly fire it could be a big thing. That is often the case—a hint can help many. And just a word as to closing the smoker nose when through using it, and thus smothering the fire—it will leave considerable charcoal which will make it much easier to light your fire again when needed.

That three-story wintering reported by S.M.A. meant a case of "millions at our house" (a phrase which can bear repetition, I think), and an enormous spring colony resulted. Where winters are not too severe it could be a good system (page 349). Up here, though, we try to get plenty of stores in two hive bodies, as this has proved most successful in actual practice. But the principle is the same—that **abundance** of food.

Producing comb honey over double brood chambers is gaining in favor each year. It does save labor and helps to keep morale up, but it is even more important to have strong colonies. Medium or only fair ones will crowd the brood chambers rather than work in sections especially. With shallow frames for chunk honey the difficulty would not be as bad, but care would have to be taken to avoid unfinished combs (page 350). The different methods for packaging chunk comb are quite clearly given by Mr. York and the article is well worth saving for reference if you plan to produce some for the first time. Also keep in mind the editor's caution to use slow granulating honey for the pack.

Honey cookies in the beekeeper's lunch should make his day more pleasurable, if not shorter. They are good—I know! But remember the caution to bake them at lower temperatures and more slowly than with recipes not including honey (page 353).

A Talk to Beekeepers

By M. J. Deyell

July is a rather important month for beekeepers, especially in Northern United States. As a matter of fact, each month of the season is important. However, in this area bees are likely to store a considerable amount of surplus from clovers and other sources. On the other side of the world — for example, Australia, New Zealand, and South Africa—bees are in winter quarters, quite inactive.

A short time ago we had a lengthy article from a European writer who apparently is ahead of his time in pointing out some of the things that may happen to our industry in the future. He favored the idea of transporting bees from one locality to another—in fact, from one country or continent to another in order to take advantage of honey flows during the entire year.

Theoretically this might appear feasible but in practice some difficulties would be encountered. In time to come it is possible that apiaries may be transported from place to place by plane. At least, there should be little danger of bees suffocating by using this method.

A Big (?) Swarm

A few days ago a man from a nearby town called at the office to say that he had found an enormous swarm of bees on the branch of a small tree in his yard and had put the bees in a box temporarily. A beekeeper never likes to turn down a big swarm so I told the man I would be out to his place late that evening after the bees had returned from the field.

After arriving I tipped up the box and found a rather small cluster of perhaps one and one-half pounds of bees building some burr comb adjacent to some small sticks that had been nailed across the inside of the box. Of course, I was disappointed at the size of the swarm but the man seemed to think it was a good-sized swarm, so I paid him the amount he had asked for the bees.

It so happens that one of my apiaries is located near so I picked up the box, placed a cloth around it, carried the bees to my apiary where I had a queenless colony, and dumped the bees down in front of the hive. I hope to find a laying queen in this hive the next time I visit the yard.

The Editor in clover

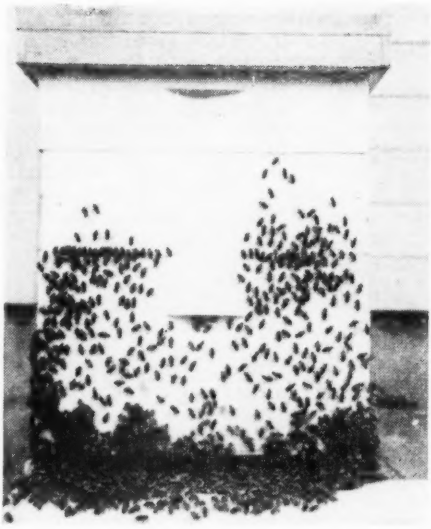
Some years ago, when keeping bees commercially in Northern Michigan, a neighbor boy rushed up to my place one morning all out of breath, to say that a very large swarm was clustered in a tree near his house. It was during the month of August when swarms are not worth much. When I went to get the swarm it was in the top of a large maple tree and was about the size of a small felt hat. When I tried to explain to the boy that the swarm wouldn't be worth the time and effort in getting it, he found it difficult to understand why.

An unusually large swarm of bees put into a hive at the beginning of a good honey flow is likely to work with vigor in putting up a large amount of surplus honey in a relatively short time, but small swarms, found late in the season, are rarely worth bothering with unless there is time to build them up into normal colonies in time to take advantage of a fall honey flow.

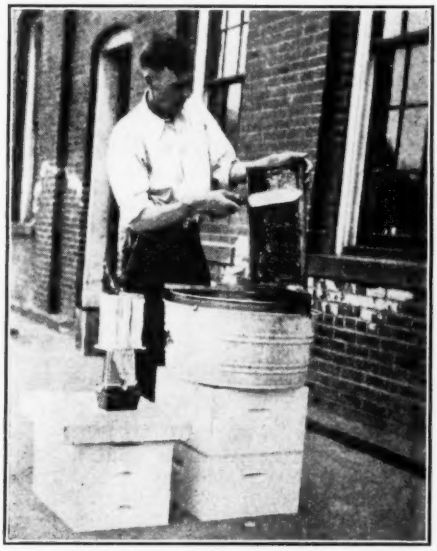
Do as I Say, Not as I Do

During the years I have tried to emphasize the importance of providing colonies of bees with ample storage space, or supers, in plenty of time prior to the beginning of a flow in order to avoid congestion within the hives, which is said to be the main cause of swarming.

I still think this is good practice but this year I failed to practice



A colony that apparently needs another super to provide more comb space to relieve congestion and prevent swarming.



This backlot beekeeper can heat water in a 10-pound pail placed over a hot plate or oil stove. The uncapping knife is dipped into hot water before used.

what I preach. I have four small apiaries west of Medina, all of which can be visited by following a sort of circle. Two of the yards are rather difficult to visit by automobile or truck early in the season before the moisture in the ground dries up. You may recall that late last summer in one of my talks I mentioned the feasibility of taking empty supers to some of my yards late in the fall, piling them up mouse-proof, and weighting the piles of supers down —in fact, tying them down so that they would not fall over. The idea back of this was that the supers would be at these yards ready to put on the following season when needed. I still think this is a good idea but I did not actually try it out at two of my yards. Sometimes rains set in about the time the last fall honey is extracted, making it difficult if not impossible to drive into yards during late October or early November.

Well, the two yards just referred to are a little distance from the road and the weather has been so rainy that it has been practically impossible to drive into the yards with a truck unless one has a jeep which, by the way, is a wonderfully convenient truck for a commercial beekeeper.

About a week ago I visited these two yards and found some of the hives quite crowded with honey which meant that supers would have to be put on right away in order to avoid congestion.

Five days ago I planned to haul supers to these yards in the evening after supper. Just as I was ready to start work rain began to fall and continued all night and part of the next day. Obviously, this made it impossible to drive to these yards. Two days later I found myself carrying shallow supers from the road to these yards in order to provide comb space for some enormous hives that needed extra room.

Have any of you who read this tried to carry three shallow supers, each with eight or nine drawn combs, a distance of 300 or 400 yards from the road into an apiary? If you have, you know how I felt after that job was finished. I said to myself, "Never again will I get caught like this." But I suppose I shall find myself doing the same thing again some other time in the future. It is one thing to talk about doing something and still another matter to actually do it. As this is written (June 15) I have not yet had an opportunity to haul supers

into those yards but I have managed to keep ahead of the bees—at least I think I have—by carrying supers from the road to the yards. This is actually hard work. If rain stays away I hope to get the yard supered this evening.

By the way, recent rains have improved prospects for a clover honey crop in this Ohio area.

Two-Queen Colonies

A number of articles have appeared on various methods of maintaining two-queen colonies — that is, having a very populous colony produced by two queens in the same hive in order to have that colony store an unusually large crop of surplus honey.

I do not have the time and space in this talk to go into too many details other than to say that a two-queen colony, properly managed, will store much more honey during a season than a single-queen colony. The main question is: does the extra amount of surplus honey justify the extra expense involved? It appears to be the general consensus that a limited amount of two-queen colonies can be maintained profitably which means that this type of beekeeping lends itself more to backlot beekeeping than to commercial beekeeping.

Two-Queen Colony West of Gleanings Office

In former talks I have made reference to this hive. It was started two years ago. As you may recall, it has a 10-frame brood chamber on each side and a 10-frame compartment in the middle. In other words, it might be called a long-idea hive. The two side compartments have perpendicular queen excluders to keep queens in their respective compartments. The main entrance is in the middle and the supers are piled up over the middle compartment. It is then possible to manipulate the combs in the two side brood comb partments without interfering with the pile of supers.

The first year we had this hive it was difficult to keep a queen in each side. The latter part of last season we succeeded quite well with the two-queen hive and secured some surplus honey. However, last seaso was not very favorable for honey production. Last fall we permitted this two-queen hive to winter with the two 10-frame brood chambers quite well filled with honey, in addition to honey in the chamber between the two brood chambers.

This spring when we inspected the hive we found both queens laying prolifically. On June 9 the queen in the one side had brood in nine combs and I do mean nine practically filled combs of brood. The queen in the other end had eight combs of brood. The bees in the 9-comb colony were starting queen cells. I should perhaps say that during the winter we closed the entrance to the middle compartment and gave each 10-frame colony at either side of the hive a 1-inch entrance hole bored in the middle of the brood chamber.

In order to relieve congestion in the brood chambers I put on a super over the middle compartment and took four combs of brood from one brood chamber and three combs of brood from another brood chamber and put these in the middle of the super given. The empty spaces were filled with good drawn combs.

In a short time the super given was filled with bees. The brood drew bees from the brood chambers.

If we have any kind of a season is should be necessary to pile on more supers, as needed, because a two-queen colony with 17 filled combs of brood is sure to put up some surplus honey if it is available.

Another Type of Two-Queen Colony

At one of my yards consisting of 20 hives I decided to try out the kind of two-queen colony advocated by Dr. C. L. Farrar of Madison, Wisconsin, and Dr. W. E. Dunham of Columbus, Ohio. The equipment I used was not identical with that which they use and recommend but the principle involved was practically the same.

During the first week in May, as I checked through this apiary and found an unusually powerful colony with brood in 10 or 12 combs, I lifted the upper chamber having from four to seven combs of brood above the inner cover, with the center block removed and a wire screen tacked on each side covering the hole. I made it a point to have the queen down in the lower chamber. The lower brood chamber was given a super, then the upper chamber was placed on the screened inner cover above the super given. A young laying queen was introduced into this upper brood chamber, or third story, and a small opening was

made by pushing the hive back a little at one corner so the bees could get out. I tried having the opening at the back of the hive and at the front of the hive, but could see no difference in results.

In due time the queens—seven of them—were laying in these upper chambers. On June 10 I checked into some of these two-queen colonies and found some with eight or nine solid frames of brood below and practically the some amount above. It was necessary to add some supers to provide more comb space.

When the main honey flow gets under way the old queens below will either be disposed of or, if worth keeping, given to nuclei to fill up some empty hives, and young queens will be placed below and two lots of bees united. The screened inner cover will permit the bees in the upper compartment to have the same odor as the bees below and thus the matter of uniting should be simplified.

It will be interesting to find out just how much more honey, if any, these two queen colonies will store than single-queen colonies.

However, it would appear that these large two-queen colonies will have to do unusually good work to surpass some of the single-queen colonies.

That same day, June 10, I found a single-queen colony that had brood in 17 combs. That does not mean 17 filled combs of brood but it does mean patches of brood in 17 combs. That was a real colony of bees.

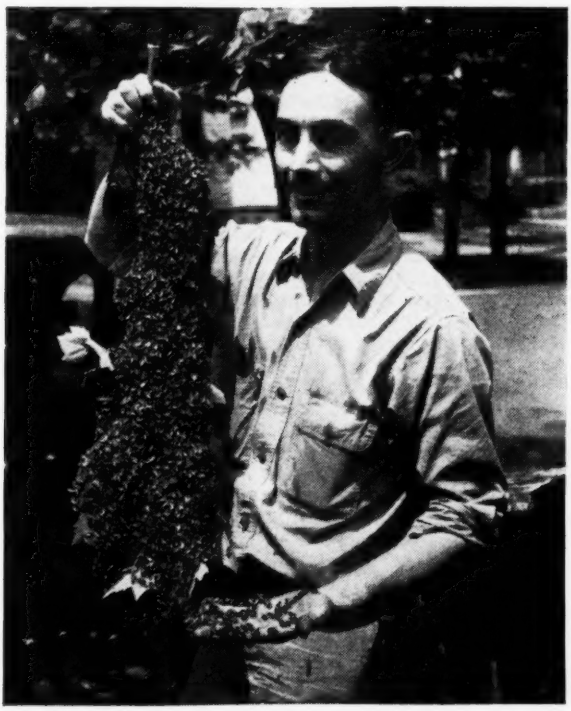
Don't Take Off Honey Too Soon

Most beekeepers are anxious to taste the new crop of honey. There is a tendency to remove combs or supers before the honey is properly ripened. Honey taken off too soon is likely to ferment because of the high moisture content. Extracting combs should not be removed until they are at least three-quarters capped over and even then the honey may not be thoroughly ripened during rainy weather. Comb honey should not be taken off until the sections are entirely capped over.

Equipment for Extracted Honey

A small two of three frame extractor is large enough for the beekeeper with from one to twenty

(Continued on page 448)



Henry Bittel of Cleveland, Ohio, with a swarm cut from a branch of a tree in a thickly-settled part of Cleveland.

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Sales Tales

By Tom Paisley

Tom Paisley is as interested in the bees as he is in selling their product —honey.

Two weeks ago Sunday at a meeting of the Cuyahoga County Beekeepers' Association we were privileged to hear Mrs. Harriett M. Grace, Director of the American Honey Institute at Madison, Wisconsin. Mrs. Grace told the beekeepers of the work of the Institute and also discussed some selling techniques.

I was very interested in hearing of the pamphlet called "Let's Sell Honey", which is available by writing to the American Honey Institute. Mrs. Grace sent me a copy of this pamphlet and I feel it is worthwhile quoting sections of it here.

In the past months we have discussed in this column various ideas and the value of these aids to selling. However, none of us is so competent a salesman that repetition is not a good aid to improving our own sales techniques.

"As Honey producers you are engaged in the food industry, the oldest and most highly competitive in the world, yet one of the most fascinating. Though it is not necessary to stress to you beekeepers the value of your superb product, yet it is helpful, to meet competition adequately, for all to take time to analyze the product, the business methods, and the consumers' market.

"Quality Means Success

"In considering the product, let us take it for granted that all Honey put on the market is quality Honey. Those of you who expect to stay in the Honey-producing business will gain the confidence of your public with a quality product, for quality is the strongest backing you have. The homemaker who buys quality Honey soon forgets the price but always remembers the satisfaction from the Honey. A quality product means repeat business. Through quality you will hold the customers you have and acquire more. In fact, quality means success.

Even with a quality product, a good container and an attractive, distinctive, and informative label are imperative. Simplicity should be the keynote for choosing each for the distribution of your Honey.

"Consider the Container

"The Honey container serves many purposes. The container protects the Honey. It is the dress for your product. 'A good package is an outward suggestion of inward excellence'. The container identifies your product and should stimulate the consumer's interest in it. Indeed, the container serves as a salesman for the Honey.

"Regardless of the kind of container you select, it should have several features. First of all, it must be sanitary. It must be sealed tight so that the Honey will not seep out and attract ants. It should be reusable. For example, housewives are attracted to Honey that is contained in a glass that later will serve as a tumbler. They are likely then to buy your Honey repeatedly to acquire a set of tumblers. A piece of comb Honey placed in a container of extracted Honey has a great eye as well as taste appeal. Try this suggestion if you market Honey in glass.

"Perhaps you can make available to your customers small dispensers

of Honey for individual use. These dispensers children especially love: for example, one four-year-old child came daily to her mother to have her jar refilled. Inclosing a few decals with each supply of Honey sold will interest the children in transferring pictures suggestive of Honey to their drinking glasses and individual Honey containers; these will further encourage their mothers' purchases of Honey.

"Quality Honey in a simple, appropriate container just cannot be beaten. Send your Honey to market as you would your child for that first day of school—clean and sparkling, ready to meet any competition.

"Design an Effective Label

"Next in significance to the container is the label in helping to sell your Honey. A unique label has helped many a product to gain distinction, yet how many times do we find a static-like label on a product, bearing in blunt terms the simple facts about the kind, the producer, and his address. An appropriate picture, friendling phrasing, eye-catching color are apealing to most women, who as a rule do the buying.

"In selecting a picture that will attract the attention of a customer, consider whether the picture of a bee or of the hive, or the picture of a plate of hot biscuits served with Honey has greater appeal. Ask yourself by way of comparison whether it is the picture of a cow that sells the tender steak and the rich milk or creamy cheese for the meat and dairy producers. Perhaps the picture with the greater appeal is the one that emphasizes the use rather than the origin of the product.

"If in designing a label you wish to include the caricature of a bee, perhaps it would be to your advantage not to make the bee hideous so that it scares the children and displeases the fastidious homemaker. Instead, perhaps you can let your imagination help picture the bee dressed as the lovely queen she is.

"As a part of the phrasing on the label, members of the American Honey Institute may include the following statement: Write to the American Honey Institute, Madison 3, Wisconsin, for a free set of tested Honey recipes.

"All about in the business world today the buy-word is to advertise your product. You, too, must advertise your Honey. To be sure, the American Honey Institute advertises Honey—all Honey—but you must advertise your own particular brand, not alone by the container you choose and the label you design but also by what was first mentioned, a quality Honey itself, as well as by your honey house, by you, and by your employees. These are advertisements for your product, good or bad for your product, your Honey.

"Who are Your Customers?

"In what manner do you market Honey? Do you sell to neighbors, at a roadside stand to individual consumer, to a packer, or to a store, or do you hold it until someone comes for it? One suggestion is worth noting here, it is one you will wish to keep in mind when selecting a container, too. If you sell to individuals, remember that 10 or 12 satisfied customers are better than one satisfied customer. The more satisfied customers you have, the more customers they will bring you, for a good word about your product is like a stone tossed into a pool, sending out ripple upon ripple until its effect has extended across the entire surface of the pool."

In repeating the beginnings of the pamphlet "Let's Sell Honey" produced by the American Honey Institute, it may be that we have introduced some of you to a new source of promotion material which is available to all beekeepers through the Institute. While the Institute is promoting honey in general and not each of our own products, any increase in sales volume for the whole industry will be felt by each of us right down the line. It is fitting, therefore, for us all to help sponsor the work which Mrs. Grace is doing both by our financial subscriptions and through the use of the material made available by the organization. Mrs. Grace certainly deserves a pat on the back for the work that she has done to date. She is doing a tremendous job in the promotion of honey — a field that can certainly stand all the energy that we can afford to use in this direction.

The work turned out by the Institute has been absorbed as a dry sponge absorbs water. More work will have to be done for us by the Institute and by each of us as individuals.

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Asked and Answered

Avoiding Foam on Honey and Flash Heating

Question: What is the foam on jars of honey after being bottled hot? It forms a ring around the top of the jar. How is the best way to prevent it? What is a suitable pump for a flash heater?—Orren Davis, Florida.

Answer: Most of the air in honey can be removed by allowing it to stand at not too high a temperature —perhaps not over 140 degrees— until the natural air present has time to rise to the top of the tank. It may then be reheated and skimmed a second time if it is found necessary. There is naturally some air in all honey and more gets in during the extracting process, especially if the honey is somewhat cool when extracted. If you have had considerably more trouble lately than you formerly had, it is possible that you have on hand what we call "gassy" honey. It is not sour, but because of an initial stage of fermentation that cannot be detected by the taste, the honey is very cloudy and hard to clarify. This happens more some seasons than others. As to whether the moisture content has much to do with it, we do not really know. If you have a pump that is running too fast so that it is sucking some air in along with the honey, that will greatly increase the cloudiness. The proper speed for any pump is that which will just deliver the honey at the required speed. For your purpose we are sure that you need a back-geared pump. For best results the honey should flow by gravity to the pump so that the pump has nothing to do but elevate it. Without a back gear it is difficult to get the speed low enough in many installations. In some bottling plants, where there is considerable difficulty from air in the honey, it is run into a closed kettle from the top of which the atmospheric pressure can be removed by means of a vacuum pump. This causes all the bubbles to expand and quickly rise to the top. It adds considerable expense to the process for you must have very heavy equipment, and if you can afford this we would certainly recommend it. It is hard to make a specific recommendation for a pump, for so much has to be taken into consideration. The temperature of the honey has a great bearing, as well as the height to which it is lifted. For best results the diameter of the pipe from the pump to the delivery tank should be at least one size larger than that on the inlet side of the pump. This greatly reduces the friction and enables the pump to do its work more easily.

Rendering Small Amounts of Old Comb and Cappings

Question: What can I do with a small amount of old comb and cappings? We do not have facilities for rendering it into wax.—Mrs. Harold M. Hamilton, Pa.

Answer: To melt up or render small amounts of comb or cappings into wax, simply place the combs in a burlap sack, tie the mouth of the sack, then put the sack containing the combs into a boiler of hot water over a hot plate, and keep it submerged under the surface of the boiling water for about half an hour. The melting point of wax is approximately 145 degrees F. The wax being lighter than water will rise to the surface. The sack will retain coarse foreign matter and prevent it from mixing with the wax. When the water is cooled, the wax on top will congeal into a solid block and can then be lifted off the surface of the water.

Painting Hives

Question: Should any of the interior or the alighting board of a hive be painted? —Vernon Prestwood, Tennessee.

Answer: It is not necessary to paint the interior of bee hives because the bees apply a thin coating of propolis mixed with wax and thus the interior of the hive is preserved. The alighting board of the hive should be painted to protect it from the weather.

Bees Will Not Work Through Excluders

Question: I have some queen excluders bought a few years ago. I have tried to use them several times but the bees will not go above them. Tell me why, if you have any explanation.—W. M. Huddleston, Tenn.

Answer: When using queen excluders, bees will ordinarily pass through them during a good honey flow. However, when there is little if any nectar coming in, bees are not likely to store any surplus honey in a super above the excluders. In order to induce bees to start

working in a super above a queen excluder it is advisable at times to take two or three combs of brood out of the brood chamber and lift these into the center of the super above the queen excluder, making sure that the queen is left down below. The empty space made by removing these frames should be filled with either drawn combs or frames with full sheets of foundation. It hardly seems possible that you have bees that are larger than ordinary honey bees. The space between the wires of the queen excluder is approximately .163 inch, which is standard.

Bees Will Not Cap Honey or Work in Supers

Question: I have 15 colonies and here is what I am up against. Last year in the honey flow a number of colonies filled up the bottom brood and two shallow supers, then they never capped any of it. Now this season during the gallberry flow I have noted they are doing the same as last year. About e'even o'clock each day they come out and ball in front of the hive—about four or five pounds of them. I did not take any honey from them last season because it was not capped. Even through September and October they did not cap it. Was this honey usable? Do you think there are too many bees in the hive? Should I put them into a new hive with a new queen? I also added the third super giving them more working space thinking this would relieve the situation, but it did not. They did not take to the new super. —O. H. Douberly, Sr., Ga.

Answer: From the description you give of the behavior of your bees it would appear that there is insufficient comb space for the bees to occupy. You do not mention swarming. As a rule when colonies become crowded for space swarms will issue. You mention having given each colony a super. If the supers contain frames with full sheets of foundation and not drawn combs it is possible that the bees hesitated about going into the supers because there may not have been a sufficiently heavy honey flow on to force the bees into the supers given. You might try raising two or three combs of brood out of the brood chamber into the super above, substituting frames with full sheets of foundation below. This would have a tendency to attract the bees into the super above. You have mentioned the bees not capping over the honey in the shallow supers. In some instances bees will not completely cap over combs of honey. This does not mean, however, that the honey is unfit for human consumption, nor for the bees. If you will examine the combs in the supers you are likely to find that a portion of the combs at least are capped over. If none of the combs are capped this would be an unusual situation indeed.

Queenless Colony Storing Pollen

Question: Please tell me if bees are likely to carry pollen into a queenless hive.—M. D. Myers, Jr., Va.

Answer: Some beekeepers assume that bees will not carry pollen into a hive that contains a queenless colony. As a matter of fact, bees in queenless colonies do actually carry in pollen and store it in the cells of the combs. This is because it is natural for bees to collect pollen whether or not they have a queen. A queenless colony is likely to accumulate quite an abundance or possibly an over-supply of pollen, whereas a queenright colony is usually able to use the amount of pollen collected each day for brood rearing.

Proper Use of Queen and Drone Traps

Question: I am producing both comb and extracted honey, and I would like to know how to keep the bees from swarming. There is a beekeeper here who produces honey for a living and he says to keep a drone trap on all the time and catch the drones and kill them. He claims this has doubled his honey production. He says not to open the hive to inspect it at all. All he does is to add supers and kill drones.—D. P. Harshbarger, Ohio.

Answer: We do not recommend the use of queen and drone traps except during the height of swarming season in the production of section comb honey, when it is necessary for the owner of the bees to be absent from his apiary during the day. He can tell by examining the traps in the evening, which colonies have attempted to swarm and such colonies should have proper attention. If the drone trap is left on a hive indefinitely during the entire season, such a hive is likely to become hopelessly queenless because if a queen can not get out of the hive to accompany a swarm, virgin queens are likely to emerge from cells. One of these virgins will kill the old queen. The virgin queen, being unable to leave the hive to mate, will die or become a drone layer, and thus the colony will become queenless.

Editorials

Honey Price Support While a bill was passed last fall which directed the Department of Agriculture to support the price of honey at between 60 and 90 percent of parity it later developed that the Commodity Credit Corporation could do little to furnish funds to carry on this work without an additional grant from Congress so the support price was delayed until action was taken by Congress.

At the present moment, June 27, a bill has passed in both the House and Senate. If signed by the President as expected, and approved by the Commodity Credit Board, no doubt the Department of Agriculture would act quickly to carry out the support of honey prices.

In the meantime the Department of Agriculture has subsidized a purchase for the export and new use of honey. At present some two million pounds of honey has been authorized for sale. This has done much to remove the surplus of industrial grades of honey.

How Late Do Bees Work? This has reference, of course, to the time of day rather than to the time of year. This is June 22, one of the longest days of the year. The sun drops over the horizon about nine o'clock DST here at Medina. It went down under a cloud this evening. The temperature was 76 degrees F. at 8:45 p.m.

There is a very populous colony of bees on scales just west of the Gleanings office. We noticed a number of bees coming in from the field at 8:45 p.m., so we visited a small patch of yellow clover about 100 yards from the hives. At 8:45 there was a large number of bees, about three to the square yard, on the clover. We returned to the hive at 8:55 and counted between 40 and 50 bees per minute coming from the fields and entering the hive. As we noticed a few bees leaving the hive for the field, we returned to the clover patch at 9:00 and noticed a number of bees on the clover. We then returned to the hive at 9:10, and counted 25 bees per minute coming from the field. There was still an occasional bee leaving the hive for the field. At 9:15 there were 10 bees per minute coming in. At 9:22 a firefly flew by the hive, apparently to furnish light for late-working bees. At 9:25 there were no bees entering or leaving the hive as darkness was settling around the hive.

The beam of the scale hive showed almost a one-half pound gain in approximately 40 minutes—8:45 to 9:25—due to the incoming bees.

While keeping bees in a raspberry region of Michigan during the late 30's, we noticed bees working late in the evening until nearly eight o' clock. Some plants yield nectar during most of the day, while others, such as buckwheat, yield only during a part of the day. This evening we could find no bees on alsike clover which was blooming profusely in small patches among the yellow sweet clover.

Well, how late in the day do bees work? Presumably as long as they can see—especially on some honey plants. We read recently of bees working on basswood during a very bright moonlit night. We have never witnessed this and do not know if the report was authenticated, but we have heard bees roar on basswood very early in the morning between four and five o'clock, before sunup.

Some of our readers may have had experience in watching bees work late in the day. If so, we would appreciate reports on this.

Why the Low Honey Yields? Beekeepers over the country would like to know the answer to the question raised by Gordon Bell in the first article appearing in this issue. It is natural to hark back to the good old days when we really secured large crops of honey. However, accurately kept records show that not all years or seasons were favorable for securing big crops of honey even when sweet clover was plentiful. But we do know that in sections of the country where clovers, especially sweet clover, thrive, it is possible to secure a good crop at least three years out of five years. Sometimes bee-

keepers secured such large yields that they could stand a partial failure once in a while. Those days appear to have gone—we hope only temporarily, not permanently. During the past decade in this immediate area we have not had a bumper crop of clover honey. Fairly good crops have been secured in some sections of the country.

Obviously, there needs to be a combination of favorable soil and weather conditions for maximum nectar condition. It would appear from what Mr. Bell says that there is a deficiency in the soil at present. During the late war grain crops and soybeans were raised on a large scale and the acreage of clover decreased.

As Mr. Bell says, "Clovers are by far the farmers' best bet to rebuild humus and nitrogen content of the soil. This cannot be bought in a sack."

It is encouraging to hear him say that when the soil conservation program gets under way—and it is actually getting started—bees will be assured an abundance of pasture.

Influence of Pollen on Brood Rearing and Length of Bee Life An interesting article on this subject by Anna Maurizio of Liebefeld-Bern, Switzerland, translated by F. E. D. Hodges, appeared in the February 1950 Bee World. The following excerpts are of interest:

"The nutritional value of different kinds of pollen varies over a wide range. At one extreme there are pollens which bring about a real lengthening of life, as well as development of the pharyngeal glands and the fat body, while others tend to shorten life, and have no influence on the bee's physiological condition. . . . . .

"Certain differences in biological effect occurred between the hand-collected pollen and that collected by the bees, the latter being generally more effective. . . . . .

"In a queenright breeding colony in the summer, newly emerged bees feed intensively on pollen during the first phase of their lives, by which means the pharyngeal glands and in part also the fat bodies are developed; moreover, their prospect of longer life is increased compared with that at the time of emergence."

European Foulbrood Considerable mystery surrounds this brood disease, since the life history of the causative organism is still in doubt.

In some sections of the intermountain states and California, European foulbrood continues to do a great amount of damage. The usual methods employed at one time in the East to combat EFB, consisting of requeening with Italian stock, leaving the colonies queenless for a time, appear to have no effect on EFB found in the West.

Microscopically, EFB in Colorado and Wyoming looks the same as EFB in the East. Sometimes in the West the disease forms a scale resembling that of AFB. Many beekeepers dread EFB more than AFB because they have no good weapons with which to fight it and they are not quite ready to resort to burning.

It has been found that stock tested for resisting AFB gave good results, but that the resistant strains were highly susceptible to EFB. Just why EFB appears to be restricted to certain regions of the country and not to others is difficult to understand, unless it is due to soil or atmospheric conditions that prevail in those certain areas favorable for the propagation of EFB. In the vicinity of Medina we have never seen a case of EFB. However, in at least one county of Ohio EFB has been a problem for some years.

More work needs to be done on EFB.

Beekeeping Terminology In these days of superlatives, with super-duper this and super deluxe that, beginners in beekeeping are usually mystified when first hearing the word **super.** They say, "Super what?"

Why the term honey **extractor?** If milk separators had been common during the early experiments in removing honey from the combs by centrifugal force, no doubt the new implement would have been called a honey **separator.** Honey **extractor** implies that there is a honey extract. A queen **excluder** demands an explanation. A bee **escape** turns out to be a one-way device. Could a more disgusting term than **foulbrood** ever have been thought of?

Every industry has its own special names and often a glossary is neces-

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sary. In photography a **filter** is not something to strain dirt out of a developer but a colored glass over the lens to restrain certain rays of light. Even **camera** originally meant a small room.

In beekeeping we have a wealth of words meaning much the same. We speak of the mating of a young queen. This is also known as the fertilization of the queen, the insemination, the impregnation.

By some a comb of brood is called a **card** of brood. That is all right, but frequently when we mean a **comb** of brood we say a **frame** of brood. The two words should not be used synonymously. The frame is of wood and it surrounds the comb. It is proper to speak of a Langstroth **comb** meaning one having dimensions devised by Rev. L. L. Langstroth. A Hoffman **frame** is a self-spacing frame devised by Julius Hoffman.

This multiplicity of terms makes it difficult in the preparation of an index for a book on beekeeping. For example, under C there are a large number of references on **comb,** then some on **comb building, comb honey, combless,** then back to **comb** again, and finally to **combs.** And when we speak of a comb, do we mean a **brood** comb or a **honey** comb? If a brood comb, is it a worker comb or a brood comb? If a **honey** comb, is it an extracting comb or a comb for bulk comb honey? By way of illustration, here is the part of the index of the 1950 edition of ABC and XYZ of Bee Culture devoted to comb and combs:

Comb, box hive, transferring 629
brood, wiring 158
Comb building between top bars 316
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freak 162
in bushel basket 323
in sections 180
natural 187, 196
relation to ripening 56
Comb, cells in 194
color 189
drone and worker cells 100
dysentery stains 195
enlarged view 189
Comb foundation, see Foundation
Comb honey, brood chambers, double 172
bulk 165, 239
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The index under Honey is even more complicated and about twice as long.

Lest the beginner become frightened, let it be remembered that every science must be learned a little at a time. We once attended a meeting of short wave radio fans, intending to write down a list of the words we did not understand. That list was started but never completed. It would have been easier to have made a list of the words we **did** understand, for that would have been a short task.

Instead of being discouraged, the beginner in radio masters one small part, then another. Just so, the beginner in beekeeping, taking one subject at a time, finds that it all builds up into a fascinating study with something new every minute, and with a depth that has never been fathomed.

From North, East, West and South

SOUTHERN CALIFORNIA, June 3

Weather: May was rather an unusual month as far as weather is concerned. There was practically no rain in Southern California — which isn't too unusual for May. But there were very few warm sunny days. During the orange flow there were a lot of cold, cloudy days which didn't please the beekeepers too much. Even the general public longed for more sunshine.

Condition of Plants: Many of the honey-producing plants are past the nectar stage. The white sage and buckwheat in most places are in good condition and may produce some honey. But it is too dry to expect much nectar from those sources. However, beekeepers are always in an optimistic frame of mind—which is a wonderful trait for them to have.

Market: The honey market is firm and some honey is being moved. The prices are good and show the results of the government price support. As much as 10 and 11 cents per pound for the better grades of honey delivered in Los Angeles is being offered. That is certainly not too much when we note the retail prices being quoted in the stores. Many of the Southern California producers are marketing through the cooperative associations, which undoubtedly helps to stabilize the market.

Miscellaneous: The orange flow is over and the honey pretty well extracted. Most of the beekeepers are very well satisfied. There were enough warm days during the flow that an unusually good crop was gathered. The bees seemed to be in good condition and there wasn't a great deal of swarming. With plenty of nectar in the blossoms everything worked out very well even though the beekeepers were quite "blue" at times because the temperatures were so low. Producers report an average yield per colony of from 50 to 90 pounds. A few report even more than 90 pounds per colony. With this fine average production and better prices offered for honey, most of the blues have turned to smiles.

The pollination question is surely keeping the beekeepers on their toes these days. Even though the prices paid per colony for pollination purposes are good, there are many problems connected with the matter. There are frequently long hauls to be made and that is expensive as well as tiresome. If some honey can be made during the blossoming of the legumes, that would help to take care of some of the expense of moving. Then there is often the worry of dusting or spraying of the fields nearby which is apt to cause a loss of bees. So everything isn't a bed of roses for the producers. But it would seem as if the prospects for a profitable year are way above normal.

The beekeepers who go north for the cotton will soon be getting their colonies ready for the move. Some of them are looking forward and hoping for wet years again when the bees can remain closer to home.—L. L. Andrew, Corona, California.

NORTHERN CALIFORNIA, June 1

Weather: Dry, hot, and windy, three words which beekeepers do not like, describe some of the weather we have been having in Northern California for a portion of this month. Other days were cool or cloudy with bee flight limited. Rainfall was very slight, especially in this area where we had but 0.05 inches. Precipitation is close to 4 inches below average and there is little possibility of catching up. In some past months I had rain to fall the very day I "predicted" a dry spring but I doubt if it will occur this time in speaking of the early summer months. A hot and dry summer might be good for irrigated fields of clover to produce nectar but such conditions do not presage well for native plants. Spring rains were sufficient to start the thistle but with lack of depth of moisture, their production period will be shortened.

Condition of Colonies: A shortage of stores has caused some colonies to pull their brood and this means weakened colonies for the next several weeks. Colonies which were left with a full super of honey went through it by the middle of May, or earlier, and required considerable feeding to be kept in good order. Many beekeepers fed dry sugar, others fed syrup in individual feeders, while some adopted the charitable method of feeding in furrows lined with waterproofed paper or in large drums. When one feeds in the open it conserves stores to pour a little syrup on each entrance, just enough to cause the bees to seek the source but not enough to cause robbing among the colonies. During a dearth of this sort, when colonies are down to their last few cells of honey, the cells are cleaned of all honeys, granulated or otherwise. If disease is present, tucked away in some of the corner cells, it will soon be evident among the brood unless one has a strain of bees with a high resistant factor to American foulbrood, or has fed a sulfa syrup to his colonies as a source of food and as a preventive to the spread of AFB. And speaking of sulfathiazole and its use as a cure and as a preventive to the spread of AFB, due caution should be used to feed it only when and under such conditions that it will not find its way into marketable honey. **Under no conditions should a beekeeper relax his vigilance against AFB because of the use of sulfa.** A thorough inspection in the early spring, another before putting on supers or making divisions, and again before taking off supers is the best way to prevent the spread of AFB by the interchange of equipment during supering or during the extracting process. Sulfa should never be fed to colonies during a honey flow unless the honey from the colonies so fed is to be used solely as bee feed.

Honey Marketing: Considerable honey has moved out of the hands of the producers to the jobbers or bottlers during the past month at prices which were higher than the previous month. The diversion program seemingly strengthened the wholesale market for a while but until the support price is definitely a fact, or until the retail price of honey is increased, there seems little possibility of the best grades of honey selling higher than 10½ to 11 cents, at least not in California. The citrus crop was disappointing in some sections, better in others. Thirty and forty pound averages were quite common. One beekeeper reported a satisfactory crop of excellent white orange honey from Orange County. He said it was the second time in his experience that the sugar content was high enough to entice the bees to work on cool and cloudy days. In the orange groves the scent of the nectar during blossoming time is extremely heavy, even when the sugar content is too low for the bees to store much surplus. No surplus honey has been produced in Northern California this spring as the manzanita in the mountains was injured by the cold. Thousands of colonies will be concentrated in the seed areas in such numbers as to preclude the possibility for the production of much surplus honey. This could be a factor in the market price of honey this fall, unless Nature provides exceptionally favorable weather for nectar secretion.

The B-Z-B Honey Company of Alhambra, California, announces the opening of a new addition of their plant for the storage and processing of honey in wholesale quantities. The warehouse is to be federally bonded with the company issuing warehouse receipts. Two, and possibly three, other honey buyers and processors in the Los Angeles area have similar arrangements for the storage of honey which adds materially to the orderly marketing of honey during the year. In some cases it is customary for the owner of the warehouse to pay the producer the market price for the honey without attaching the carrying charges. However, if the producer can sell for more than what the warehouse operator can pay, then he can meet any advance taken against the warehouse receipt, pay the storage and insurance charges, and deliver to any other buyer. The honey remains the property of the producer as long as he holds the warehouse receipt which can be used as collateral for a loan at a bank. This system, which operates with grain and many other products, obviates the necessity for the producer to sell his honey on an unwilling market as soon as it is produced. He can warehouse all or a

portion of his crop according to his needs. The committee studying the Proposed Marketing Order for California Extracted Honey will have its recommendations ready to submit to the annual convention of the state association in December.—J. E. Eckert, University of California at Davis.

TEXAS, June 10

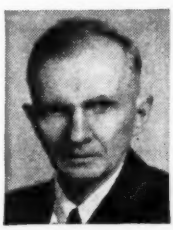
Weather: Relatively cool and cloudy weather prevailed over most of Texas during May. Rainfall generally was above normal with considerable excess in some areas. Some localities experienced damage by flood, hail, and windstorms. In spite of the relatively mild winter the spring season was cool with the result that crops and plants in general are somewhat behind schedule.

Bees, Plants, and Honey Crop: The main honey flow is now in progress over most of Texas. Over a large portion of the state horsemint is very abundant and is yielding nectar freely. The honey crop from this source promises to be as large as it was last year. Throughout the blackland area considerable honey was gathered from Texas marigold, Gaillardia. Most apiaries are now concentrated in Central and North Texas in the vicinity of vetch and sweet clover. Yields of about 40 pounds per hive were obtained from vetch. Vetch honey is of high quality, water white and of a very mild and pleasing flavor. The vetch flow is now about over and the bees are gathering from sweet clover. Most yards now on vetch will be moved to sweet clover, cotton, and alfalfa. In Southwest Texas the summer bloom of mesquite is beginning to open.

Market: Considerable new crop extracted honey is now offered in the retail market at prices which prevailed during the early spring months. Comb honey has not yet appeared in any volume on the market but is in good demand. Darker grades of extracted are offered on some retail markets as low as 14 cents per pound in 5-pound glass.

Miscellaneous: In the Brazos River Valley where alfalfa has been grown in sizable acreage for some years some farmers are now leaving the summer cutting for seed production and are requesting bees for pollination service. Kaufman County held its annual festival on May 5. This county last year produced 6 million pounds of vetch seed which is ample reason to claim the title: **The Vetch Capital of the World.** A larger crop is now about to be harvested. About 10,000 colonies of bees were moved into this county for pollination purposes this year. Very close cooperation existed between farmers, the Soil Conservation Service, the County Agricultural Agent, local civic organizations, and beekeepers. Beekeepers received all possible consideration for their best interest and as a result both farmers and beekeepers profited by the undertaking. Sizable acreage of vetch is grown also in adjacent counties and in the West Cross Timbers Area. In Erath County growers paid up to $2.50 per colony for pollination service. Beekeepers may thus derive an income for pollination service rather than from the production of honey and thereby render a greater service to agriculture. — A. H. Alex, College Station, Texas.

MONTANA, June 3



Condition of Bees: The bees have been getting some honey all through May. It doesn't look as though there will be much need of feeding before the regular flow starts the latter part of June. It might be that some feeding will be done to help brood rearing and to give them extra sulfa.

A good many beekeepers are running about the same number of bees as last year. There are no reports of any increase in bees for this year.

The first heavy shipment of package bees came into Western Montana by truck this year and it was reported that they came through in about one-half the normal time. Some fellows would hive a hundred packages without any loss of queens or bees. Some very fine queens came from Texas and California and

they were in good condition on arrival, but there was plenty of trouble getting queens in the hives. Some of them were here ten days or more before weather would break enough to open hives.

In some areas where buttercups were in bloom the first of April the packages are showing up with lots of disease very similar to European foulbrood. Others report very bad dwindling of packages. Many of them at this time have only three frames of bees and very little feed.

There has been the usual call for honey and wax but it all seems to have been sold.

Miscellaneous: Very few bees have been moved here in ten years. Some were moved into a 100-acre cherry orchard. Some farmers are wanting bees for small red clover and Ladino clover fields. It is expected that the alfalfa seed growers will be using lots of bees. Some beemen are expecting good incomes from pollination for seed growers. It is very unfortunate that there is so little information available for seed growers. It looks as though this state will be going all out to solve many of our problems that have troubled us for these many years.

It looks as though the Northwest should not be too bad a place in the future. One place has already showed more tourist trade than at this time last year and our unemployment of winter months seems to be a thing of the past.—Parson Pile, Corvallis, Montana.

MICHIGAN, June 14

Weather: Winter lingered into May in Michigan and finished off many colonies that would have made it otherwise. Final reports look like about 20 percent loss from starvation, queenlessness, and spring dwindling. Good beekeeping certainly paid off last fall. Colonies with young queens, young bees, and plenty of food arranged the way they wanted it in the brood nest, came through in good shape. And it is worth noting that apiaries favored with a good fall honey flow wintered better than those without it, feeding or no.

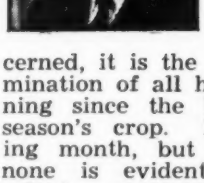
David Running used to say that cold wet springs made a honey crop if you have any bees left to get the honey. In spite of damage from heaving, clovers recovered and are blooming on schedule and look good in most sections. On the eve of the beginning of the honey flow we feel that we will get honey if we get heat at the right time.

Michigan beekeepers have been cautious about expanding, several preferring to make up winter losses with brood from strong colonies and new queens rather than with packages at the new express rates.

The 1949 crop is pretty well cleaned up in Michigan. Few beekeepers held their honey for the support price announcement.

Over all, the prospect is encouraging. The rough going in years past has eliminated some "fair weather beekeepers". Those remaining in the business have tightened their belts and their budgets. They find comfort in the prospect of increased legume acreage. If the weather is favorable 1950 can be the year we have been waiting for. —R. H. Kelty, Lansing, Michigan.

ONTARIO, June 10



General Conditions: June is traditionally the month of sunshine and weddings, but to the beekeeper in the North, or conversely, the South, as far as Ontario is concerned, it is the month of the culmination of all his work and planning since the harvesting of last season's crop. It is the swarming month, but to date little or none is evident largely because colonies are two or three weeks late in reaching peak strength. It is also the month in which our short and intense white honey flow begins. The efficient beekeeper tries to have his colonies at full strength by the middle of the month, but I question if 50 percent of colonies are now in that condition. I recently heard a beekeeper remark that two of his yards are wrecks, the remainder in good condition. I have heard unofficially that some commercial beekeepers suffered a 50-percent winter loss.

Today I noticed a few clover heads in bloom. The late Morley Pettit used to say that ten days after the appearance of the first clover bloom the white honey flow came on in earnest. That was no doubt true 20 or more years ago when the farmer who did not grow alsike or sweet clover or both was an exception. Today a field of either is a rarity, almost a curiosity. It is doubtful if we can claim to have a clover flow today. True the bees gather from the Dutch clover that grows in the pasture fields and from the alsike that grows wild in waste places, and from the sweet clover that grows on the roadsides provided the highway authorities do not cut it down previous to the blooming period, which they usually do. But our so-called white honey today is apt to be a mixture of nectar from many minor sources. I have seen honey marketed as white honey in recent years that was most unlike the choice product we were familiar with a generation ago.

Miscellaneous: I attended the regional field day held on June 10. One of the speakers was Tom Shields, manager of the Ontario Honey Producers Cooperative. He reviewed the marketing situation, which is not such as to cause undue optimism in the immediate future. The Federal Government is holding a few million pounds of honey purchased last year under price support which it proposed to offer to the domestic market accompanied by an advertising campaign, with a view to having it disposed of before the 1950 crop is ready for market. However, the Government at the time of purchase specified that it was to be packed in bulk containers, presumably for export. It appears now that the packing plants are to be asked to repack this honey in consumer containers and Mr. Shields was decidedly skeptical of the Government's ability to get this onto the market without clashing with the current season's crop.

The need for intensive advertising was also discussed at the meeting. It is becoming evident that displays at exhibitions offer one of the best, cheapest, and most effective means of advertising. The huge displays at Canadian National Exhibition and Royal Winter Fair last year were seen by hundreds of thousands of people and attracted wide interest. This year our regional association is planning to erect a similar display on a smaller scale at the smaller city exhibitions and rural fairs within our territory.

Beekeeping in Ontario is undergoing a period of postwar adjustment which no doubt will squeeze out many who entered it as a get-rich-quick proposition in wartime. Those who remain will know in a few years if beekeeping is to continue as a business or revert to its sideline status of the early years of this century.—Allan T. Brown, Peterborough, Ontario.

Bees Attract Various Types of Cats

The skunk is after food—but the kitten is only curious

Just News

J. J. Wilder of Waycross, Georgia, a manufacturer of bee supplies, a large well-known commercial beekeeper, and handler of honey, passed away May 27 in his seventy-eighth year, following a long illness. For some years Mr. Wilder published The Dixie Beekeeper, a bee journal devoted largely to southern beekeeping. He is reputed to have had 15,000 colonies at one time, some of which were worked on shares. Mr. Wilder was a contributor to North, East, West and South department of Gleanings for some years and published a book entitled "Southern Bee Culture" in 1908.

* * * * *

A Beekeepers' Short Course in connection with Farmers' Week will be held in Clemson, South Carolina, August 16 and 17. A good program is being arranged including out-of-state speakers. A cordial invitation is extended to all.

* * * * *

A Beekeeping Short Course will be conducted at The Pennsylvania State College, August 21 to 25, 1950, and will have a full program both in lecture work and management in the apiary. Emphasis will be given to swarm control, queen rearing, and the marketing of honey. The College is well equipped to teach and demonstrate the various phases of management involved in the control of diseases and enemies of the honey bee. There are six college apiaries, with a total of 140 colonies of bees and 100 queen mating hives, for the students to work with. The laboratory contains the latest in commercial and backlot extracting equipment. The teaching force will include George Rea, W. W. Clarke, and Edwin J. Anderson. For further information write to A. Leland Beam, Director of Short Courses, School of Agriculture, State College, Pa.

* * * * *

An interesting and worthwhile meeting for beekeepers is scheduled for Bowditch Lodge on the campus of the University of Massachusetts at Amherst on July 21 during Farm and Home Week. The speakers include Dr. W. L. Coggshall, Cornell University; Dr. W. E. Dunham, Ohio State University; and Dr. E. H. Wheeler of the University of Massachusetts. Topics for discussion include Management of Bees, Honey Production, Production and Care of Beeswax, Two-Queen Systems of Management, and Bee Poisoning. Visitors from nearby states will be welcome. It is hoped that as many of the Massachusetts beekeepers who are interested will attend. The program will start at 10:00 a.m. However, if you can arrive sooner you will have an opportunity to meet the speakers and discuss matters with them personally.

* * * * *

The Livingston, Wyoming, and Allegheny Counties, (New York) Beekeepers' Association meeting and picnic will be held on July 29 at the home of Earl H. Austin of Kanona, New York, on U.S. Route 15 four miles west of Bath.

* * * * *

The National Honey and Pollen Plants Committee of the American Beekeeping Federation will meet on the campus of the University of Arizona at Tucson, October 24 to 26, 1950. More details later.

* * * * *

Summer Picnic of the Empire State Honey Producers' Association will be held on August 12 at Taughannock Falls State Park, near Ithaca, New York. Labor-saving devices will be featured, with prizes of $10.00, $5.00, and $2.50 for the best. Everyone is invited to attend and to participate. Honey prices, government regulations, and crop conditions will be the main topics of the short talks.—E. T. Cary, Sec.

* * * * *

The Berks County (Pennsylvania) Beekeepers' Association will hold its annual Picnic and Summer Meeting on August 5 at 1:30 p.m. at the Ontelaunnee Orchards, Leesport, Pennsylvania. The Ontelaunnee Orchards are located on the Pottsville Pike one-half mile south of Leesport. Come one and all and enjoy the refreshments and fine program. Honey-flavored ice cream is a special treat for our summer picnic.—Henry F. Phillips, Sec.

* * * * *

The Clark County (Ohio) Beekeepers' Association will hold a combination outdoor meeting and

picnic on Saturday afternoon, July 15, at the home of K. M. Bobless, one-half mile south of Donnelsville. Go west on State Route 40 from Springfield, Ohio, to Donnelsville. Turn left (south) at the store in Donnelsville. Watch for signs. The meeting will get under way at 1:30 p.m., with demonstrations, talks, and discussions. Eating will start around 4:30. Any friends who would like to come are invited.—H. R. Swisher, Sec.

* * * * *

The Middlesex County (Massachusetts) Beekeepers' Association had their regular meeting at the home of member J. S. Kemp in Stoneham. The Club hive, which was started at the May meeting, was inspected and found to be making fine progress and with a fine brood working. The hive will be examined again at the next meeting on July 29, which meeting is to be held at the apiaries of member Charles L. Helmboldt at Lowell Road in Westford, Massachusetts. The booklets on honey now available from the American Honey Institute have been and will again be displayed to members for the development and sale of honey.—John H. Furber, Sec.-Treas.

* * * * *

The June meeting of the **Erie County (Ohio) Beekeepers' Association** was held at the home of Mr. and Mrs. L. J. Guisinaes of Birmingham. A general discussion on beekeeping was held by members. After the meeting a lunch was served and a social hour enjoyed. Plans are also being made for a picnic on July 30 which will be held at the American Legion Hall in Milan on July 7 at 8 p.m.—Mrs. Al Roeser, Sec.

* * * * *

D. L. Hopkins, Alameda County Apiary Inspector, died suddenly last February 2 at his home in Oakland, California. He is survived by his widow and a daughter. Mr. Hopkins was born in Vermont 77 years ago, finally making his way to California where he made his home, with the exception of the time he served in the Spanish American War. An electrician by trade, he kept bees for a hobby, and for many years he also served as president of the Alameda County Beekeepers' Association. He was appointed Alameda County Apiary Inspector in April, 1941, and served until his death. His generous assistance and advice will be sorely missed by the more than 300 backlot beekeepers of Alameda County.

* * * * *

The Summer Meeting of the Ohio Beekeepers' Association will be held at Findlay, Ohio, on July 19 and 20—the Hancock County Organization acting as host. An interesting and instructive program has been planned. Weather conditions permitting, there will be a tour to visit fields of legumes, and orchards in the vicinity where bees have been used for pollination purposes. Several outstanding authorities in beekeeping have promised to be in attendance.—Chas. A. Reese, Ext. Apiarist.

* * * * *

The Michigan Beekeepers' Association will meet at Alma on July 27, at Alma College, and at Benzonia on July 28, at Mills Community House. President Howard Potter will be chairman.

10:00	Visiting Hour
11:00	Business Session (meeting of Nominating Committee)
11:30	Michigan Apiary Inspection—D. P. Barrett, Lansing
11:45	Report of Nominating Committee
12:00	Dinner
1:30	Ohio Apiary Inspection—S. E. Bailey, Columbus, Ohio
1:50	Modern Queen Rearing—G. H. Cale, Jr., Dadant & Sons, Hamilton, Ill.
2:10	Honey Bees as Pollinators—Dr. Ray Hutson, Head, Dept. of Entomology, Michigan State College
2:30	Introduction of New M.S.C. Apiculturist
2:45	Musical Entertainment
3:15	Price Support Program for Honey—Dr. Harold J. Clay, P.M.A., U.S. D.A., Washington, D. C.
4:00	Diversified Uses for Honey—Walter Diehnelt, Honey Acres, Menomonee Falls, Wis.
4:20	Modern Merchandising Methods—Alan Root, The A. I. Root Co., Medina, Ohio

Notice! Reservations for dinner at Alma and Benzonia must be received at the association office, 3110 Piper Road, Lansing 15, by July 20. Meals $1.50. Reservations made before the deadline will be honored. Others will have to take their chances, and may have to eat elsewhere.

Directions: Alma College is three blocks west of turn in US 27A, at the west end of the main street in Alma. The meeting will be held in the Chemistry Building, center of campus, on the north side of main street and east side of the short street that runs through the campus.

(Continued on page 448)

American Honey Institute News Notes

By Harriett M. Grace, Director
Commercial State Bank Building
Madison 3, Wisconsin

Does your honey package look as good as the honey inside is? Are your standards for packaging and exhibiting just as exacting as your standards for producing the honey itself?

This is the time to consider the way your honey looks to others, for the new season's honey will soon be ready for exhibiting and marketing.

When you exhibit honey at your county or state fair—how will your exhibit look? Will it look professional, businesslike, and attractive? Or will it look sloppy, amateurish, and dull?

The containers that you put your honey in should be spotless. The labels should be on straight; there should be no messy glue or runny paint apparent to the customer.

The sign that tells visitors what your brand is and what kind of honey you sell should be painted with care. The letters should be even; the colors should blend well together. A plain black and white sign will be attractive if properly painted.

Let the visitors feel that you are a business man and that, therefore, they must expect to pay a decent price for a good product. If you permit customers to feel that you are not really in business but are merely hoping that they'll buy from you since you've produced the honey already, you'll have fewer purchasers of your product and can expect a lower price for it.

People like to feel that they are dealing with someone who has invested a certain amount of time, energy, and money into his business and can rightfully expect a good return.

You know that you, yourself, often just look at a display and say to yourself, "Now that fella's a real business man; he knows what he's doing. I think I could trust any product he was pushing."

Let people say the same thing about you! Let your exhibit show that you are progressive and forward-looking, that you believe in the latest techniques for producing honey, that you keep your supplies up to date, and that you are not proceeding haphazardly but with a definite plan and goal in mind.

Give the customer a little extra for his money—a pamphlet containing a few recipes is always a good idea, or you might want to give away a very small bottle of your honey, a bit of beeswax, or a prize for the children—perhaps a little pin in the shape of a bee. It's human nature to want to get something that's free—so use that device to get visitors interested in your honey—it will pay big dividents.

You can also make your exhibit more attractive by having a poster or two near your honey. The American Honey Institute has two that are ideal for this purpose. The first says "And Don't Forget the Honey", and the second reads "Take Home Some Honey". The price per poster is 25 cents.

Housewives will appreciate receiving a few recipes containing honey. The American Honey Institute has reprinted three leaflets that would be perfect for distribution at an exhibit or stand. They are the "Two New Favorite Honey Recipes", "Jellies and Marmalades Made with Honey", and "Use Honey for Canning and Preserving".

"Two New Favorites" contains the recipes and pictures of the Cherry Nut Loaf Cake and the Quick Honey Spice Cake, and costs just 75 cents for 100 copies.

"Jellies and Marmalades" and "Canning and Preserving" are both big summertime favorites. They contain all the information the housewife would need to know about making preserves and jellies with honey.

Each of these booklets contains eight pages jammed full of suggestions and recipes that every housewife will appreciate. And the cost—just $1.00 per 100. That means that you will be spending only one additional cent per customer—and think of all the extra honey she will use.

There's just one direction that a beekeeper should want to travel—and that's forward! Keep the standards of your packaging and presentation as high as the standards for the production of honey itself, and you'll reach your goal!

Causative Organism of European Foulbrood Probably Bacillus pluton — Not a Spore

Some question has been raised as to whether or not **Bacillus pluton** is spore forming. **Bacillus alvei,** spore forming, has often been found with **Bacillus pluton,** non-spore forming. We submitted the question to Dr. A. P. Sturtevant, bacteriologist at the U. S. Bee Culture Laboratory at Laramie, Wyoming. He replies:

In reply to your letter, it seems probable that your correspondent has in mind observations reported in more or less recent years by A. G. Lochhead as well as by the late Dr. C. E. Burnside, which indicate the possibility that **Bacillus pluton (White),** a non-spore former which in the past has been considered the causative organism in European foulbrood is not an entity in itself, but may be one stage in the life cycle of some other organism. This manifestation known as dissociation or pleomorphism has been observed in a considerable number of bacterial organisms.

Lochhead in 1929 and later Burnside in 1934 reported work with cultures which indicated that **Bacillus alvei** (a spore former), commonly found associated with European foulbrood, is one of this type of organisms which, under certain cultural conditions, shows this dissociation from the typical spore-forming rod type to the "pluton" form, which they consider another phase of the life cycle of **B. alvei.**

If this is true it might help explain some of the mysterious outbreaks of European foulbrood or how the disease is carried over from one season to another. However, so far the identity of the "pluton" like forms that have been observed to develop under certain conditions in cultures of **B. alvei,** with similar forms seen in the microscopic examination of European foulbrood larvae, is suggested only on the strength of microscopic comparison. Any attempts to inoculate colonies with cultures of these "pluton" like organisms derived from cultures of **B. alvei,** so far have been inconclusive and unsubstantiated so far as I know, but the implications of these findings are at least interesting and further work may bring out something of value.

More recent work done by Prof. R. Burri of Switzerland, reported in The Bee World, indicates that he has made somewhat similar observations. He believes that White's **Bacterium eurydice** and **Bacillus pluton** are two stages in the life cycle of some organism but he makes no mention of any relationship between the **B. pluton** forms and **B. alvei.**

Therefore, it is my personal feeling that until more research is done on this problem, substantiated by successful colony inoculations by means of cultures, that it would be unwise to make such a definite statement to the effect that European foulbrood is caused by a spore-forming organism, without some explanations.

Paul Hadley who sends us this picture calls them just three hives. It's an interesting picture with the creek in the background, and we wonder what happened to the two colonies which have no supers.

Buy and Sell Here

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies. Onsted, Michigan.

NEW CROP of honey shipped daily from producer in Florida. Pure orange blossom, 5 lbs., $2.25; Pure Florida cut comb honey, 5-lb. pail, $2.75. No C.O.D. orders. All shipments prepaid. E. R. Raley, Daytona Beach, Box 1610, Florida.

NEW CROP COMB HONEY — Ready about July 1st. C. W. Schrader, Waterville, N. Y.

HONEY, white to water white clover, heated and strained, ready for bottling. 15c per lb. in 60-lb. cans, fob. Lose Brothers, 206 E. Jefferson St., Louisville, Ky.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 1.

LIGHT AMBER honey in 60's 10 and 11c. Sample 15c. Joseph Fekel, Rt. 4, Vineland, N. J.

Orange blossom, Florida tupelo, white clover, and buckwheat honey in one or five gallon cans. Pure maple syrup in gallon cans. Alexander Company, 819 Reynolds Rd., Toledo, O.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on COD terms except where the buyer has thoroughly established his credit with the seller.

WANTED—Honey and wax, any quantity. Send samples and prices. Alexander Company, 819 Reynolds Road, Toledo 7, Ohio.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. 60-lb. cans furnished if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles 21, Calif.

WANTED — White and amber honey. Any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—EXTRACTED HONEY—Clover or light amber. C. H. Denny, Rt. 4, Ravenna, Ohio.

HONEY AND WAX WANTED — Mail sample. Advise quantity. BRYANT & SAWYER, 2425 Hunter St., Los Angeles 21, Calif.

CASH FOR BEESWAX — Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 N. High St., Columbus 2, Ohio.

WANTED—Comb honey and extracted honey, large or small amounts. Send price list and samples. R. A. Raley, Box 2263, Daytona Beach, Fla.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

WANTED—Extracted honey, all grades, also comb honey. 1500 60's, emptys, used, for sale, 15c each. Honeymoon Products Co., 39 E. Henry St., River Rouge 18, Mich.

FOR SALE

QUEENBEE PAINTING OUTFIT, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

WE CARRY a full line of ROOT QUALITY Bee Supplies. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

FOR SALE — Write for large free Bee Supply Catalog. We manufacture bee hives, foundation, tanks, and extractors. Listing many items not found in other catalogs. Walter T. Kelley Co., Paducah, Ky.

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

The only comb foundation plant in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, R.D. 3, Auburn, N. Y.

SIMPLEX TRAP clips queens without handling, $1.00 postpaid. Instant Frame Spacers — eight-nine, specify size, $1.50 postpaid. Free circulars. George Leys, 36 Jackson St., New Rochelle, N. Y.

YOUR WAX WORKED into medium brood foundation, 23c pound; 100 pounds, $19.00. Medium brood foundation for sale at 65c pound. Fred Peterson, Alden, Iowa.

CLEAN UP AFB WITH SULFA. 25 tablets, 50c; 50, $1.00; 100, $1.50; 1000, $7.00. Write for big 64-page catalog listing many items not found in other catalogs. WALTER T. KELLEY CO., Paducah, Ky.

10-frame bodies drawn combs, $4.50; metal covers, $1.00; deep supers, $1.00. Irvin VanDevier, Medina, Ohio.

FIND wild bee trees with my outfit. Grover, Bristol, Vermont.

350 ten-frame hives of bees. Comb and extracted complete outfit. Extra equipment. No junk. No disease. F. J. Smith, Castalia, Ohio, Rt. 1.

WHY DON'T YOU? Use a smoker fuel that does not upset your colony, stop them from work all day, and sting you half to death each time you go into them. Order here, and you have the answer. Nothing like it. Makes a cool, pleasant smoke that leaves the bees liking it. Why, they don't even stop work and every one can work with them with pleasure. Only $2.00 for enough to last the average beekeeping season. O. K. Anderson, Box 193, Coffee Springs, Ala.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, 60c each. D. W. HOWELL, Shellman, Georgia.

CAUCASIANS—Booking orders for 1950. Lewis & Tillery Bee Co., Route 1, Box 280, Greenville, Ala.

YANCEY HUSTLERS — Reliable package bees and queens. Prices right. Caney Valley Apiaries, 2500 Nichols, Bay City, Texas.

GOLDEN QUEENS, 90c airmail. Write for quantity prices. O. E. Brown, Route 1, Asheboro, N. C.

CAUCASIAN QUEENS, 1 to 9 inclusive, $1.25 each; 10 to 49 inclusive, 90c each; 50 and over, 75c each. Howard E. Crom, Rt. 1, Box 75, Ripon, Calif.

PACKAGE BEES headed by mountain Gray Caucasians or leather colored Italian queens. March 20 delivery. Write for prices. Twin Bee Co-op., 3616 Caucasian Circle, Tampa, Florida.

BREWER'S LINE BRED Caucasian queens, 1-99, $1.00; 100 and up, 75c. Member ABBA. Brewer Brothers Apiaries, 3616 Caucasian Circle, Tampa 9, Florida.

YOUNG VIGOROUS ITALIAN QUEENS, 75c each. Live delivery guaranteed. Alabama Apiaries, Uriah 2, Alabama.

GOLDEN ITALIAN BEES AND QUEENS —Very gentle to work with. 2 lb. with queen, $3.00 each; 3 lb. with queen, $4.00. Select untested queens, 1 to 25, 90c; 25-up, 75c. Carolina Bee Farm, Graham, N. C.

EARLY PACKAGE BEES. Prompt shipment begins May 10th. Two-pound package and queen, $5.50 postpaid. Three-pound package and queen, $6.60 postpaid. Choice Italian queen, $1.25. Safe arrival guaranteed. Health certificate furnished. Birdie M. Hartle, Reynoldsville, Pa.

GREEN'S profit producing queens are the best. Backed by 22 years of breeding better queens, 75c each. D. P. Green, R. 2, Deland, Fla., Phone 512XM.

CAUCASIAN bees and queens, 2 lb. and queen, $3.00 each; 3 lb. with queen, $4.00. Select untested queens, 1 to 25, 90c; 25-up, 75c. Prompt delivery. Black River Apiaries, Rt. 1, Currie, N. C.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

Michigan Headquarters for

Root QUALITY

Bee Supplies

Complete Line of Bee Supplies and Honey Containers
Prompt Service

Michigan Bee and Farm Supply

510 N. Cedar St.
Box 7 Lansing, Michigan

G. B. Lewis Wooden Goods!

Dadant's World Famous Crimp Wired Foundation. — Their 85 years' experience is your safeguard. Catalogue on request.

Dotson's Apiaries

3059 W. Roxboro Rd., NE
ATLANTA, GEORGIA

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

60 lb.
Cans
Several
Thousand
Used Cans
Just Like
New.
Also
Brand New
Cans with Large
Size Openings.
Packed in Cartons
of 24
or
in Bulk Truckloads
or
Carloads.
Will Guarantee
To Save You
Money on
Your 60 lb. Cans
Also 2½, 5, and
10 lb. Tins.

Please Write for Prices

C. W. Aeppler Co.
Drawer 239
Oconomowoc, Wisconsin

CAUCASIAN QUEENS, 75c each. EPPLING'S APIARIES, "IDLEWILDE", Covington, Virginia.

THREE BANDED ITALIAN bees and queens, 2 lb. with queen, $3.00; 3 lb. with queen, $4.00; select untested queens, 1 to 25, 90c each; 25-up, 75c each. Alamance Bee Co., Graham, N. C.

REAL PETS — Brown's non-stinging, non-swarming bees. Owing to personal injury I will not fill orders until further advertisement. Brown's Apiary, Cape May Court House, N. J.

QUALITY CAUCASIAN QUEENS. Gentle, good working bees. $1.00 each. 6-up, 75c. Fred C. Brock, McDonald, Tenn.

NORTHERN BRED ITALIAN QUEENS —For production, $1.00 each. Ten-up, 90c. Shirl Baker, Rodney, Michigan.

FOR SALE—Complete extracting outfit—8-frame extractor, motor, pump, 3 storage tanks, piping, electric knife, etc. All for $150.00. Edward Ranum, Mt. Horeb, Wis.

FOR SALE—180 well painted 4-story 10-frame colonies of bees. Disease free. Selling because of poor health. C. E. Andrews, Box 334, Fallon, Nevada.

FOR SALE—200 colonies with honey crop—reasonable. Roger A. Morse, Saugerties, N. Y.

FOR SALE — 500 colonies, completely equipped, located in the Finger Lakes region; seven-room house with automatic oil heat on 2½ acres land. Honey house, poultry house, and equipment. Turkey shelters and fruit. Complete year around set-up. Ashbel Rogers, Poplar Ridge, N. Y.

100 ten-frame double-story colonies, $8.00 each. State inspected. No disease. Will sell all or part, or trade for good car. Geo. Olowach, Custer, Mich.

FOR SALE—50 supered colonies bees, crop, move at convenience. Inspected. Abraitys, Sergeantsville, New Jersey.

COMPLETE 1000 colonies. Supers. Clover-alfalfa area. Warehouse and extracting equipment. Truck. D. Giddings, 2307 N. Huston, Grand Island. Nebr.

WANTED

WANTED: To lease, with option to buy, 500-800 colonies bees, 10-frame standard equipment, in Western Colorado. J. S. Wells, 14030 Foothill Blvd., San Fernando, Calif.

IMPORTANT Distributor wants to establish dependable sources of supply for different types of bulk honey. Write particulars. Box 750. Gleanings, Medina, Ohio.

EXTRACTORS FOR SALE

FOR SALE — New Willcox uncapping machine, complete, also 4-frame Sears hand extractor. A. B. Chenovick, 825 Helena Ave., Helena, Montana.

FOR SALE—45-frame Simplicity extractor, like new. Stanley Honey Co., Gilbert, Iowa.

MISCELLANEOUS

BEES FOR SALE OR LEASE—Will sell part or complete units fit your requirements. You can purchase part unit lease additional quantities round out your needs. Option to buy later. Proven territory: Idaho, Wyoming, Montana, Nebraska—sweet clover, alfalfa areas. Our processing plant and marketing program assures outlet honey produced from bees purchased or leased. Bright future—low cost operations—Our 45 years production experience ready assist you getting started. Right prices, reasonable terms available. BRADSHAW & SONS, Wendell, Idaho, Largest Individual Producer-Packer in U.S.

HELP WANTED

HONEY SALESMAN WANTED — Good income possible — Protected territory — Write Box No. 650, care of Gleanings, Medina, Ohio.

SEEDS

SEEDS OF HONEY PLANTS. Ask for free catalogue. Pellett Gardens, Atlantic, Iowa.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA and adjacent states. We offer a real service on Lewis-Dadant Supplies, honey containers, and labels at a price saving to you. Top market prices paid for extracted honey and beeswax. HONEY SALES COMPANY, 1806-08 NO. WASHINGTON AVE., MINNEAPOLIS, MINN.

MAGAZINES

WESTERN CANADA BEEKEEPER—Official organ of the Manitoba Beekeepers' Association. One year, $1.50; two years, $2.25; three years, $3.00. In combination with Gleanings in Bee Culture, $2.75. 211 Affleck Bldg., Winnipeg, Canada.

KNOW interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh, Dist Naini Tal, U.P. India, or obtainable from them. Subs. Rs7/—or 10 shillings or 2.25 dollars per annum. Single copy Rs¼ s. 1/9 or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

THE BEE WORLD—The leading journal of Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including subscription to the paper 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

ANGORA GOATS

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription — $1.00. Sample copy—15 cents.

Package Bees
Italian Queens
For 1950

Packages with Queens:

	2 lbs.	3 lbs.	4 lbs.	5 lbs.
1-99	$3.00	$3.90	$4.70	$5.30
100-up	2.75	3.75	4.40	5.00

Queens 90c each Airmail postpaid
—clipped on request.
No better quality at any price
Satisfaction guaranteed

Geo. A. Hummer & Sons
Prairie Point, Miss.
Established 1892

Mountain Caucasian Queens for June

Order now while available—genuine gray queens whose bees are gentle and good honey gatherers.

Prices: Postpaid, 1 to 24, $1.10; 25 to 99, $1.05; 100-up, $1.00. Tested queens, $2.50 ea. A-1 Breeders, $7.00 and $10.00 ea.

BOLLING BEE CO.
Bolling, Ala.
"Dependable Service"

Hardy Northern Queens

Genuine leather-colored queens and bees that excel in honey production and pollination. We have shipped this same strain of bees to many parts of the world in the last six years without complaint or dissatisfaction.

10-frame colony, tested queen,	$15.00
3-lb. pkg. with young queen	4.75
Untested Queens	1.00
Tested Queens	2.00

Health certificate with each shipment

Barger Apiaries
Carey, Ohio

KOEHNEN'S
Package Bees and Queens
For Quality and Service
KOEHNEN'S APIARIES
GLENN, CALIFORNIA

Italian Queens
65c Each
GIRARDEAU APIARIES
Tifton, Ga.

PRITCHARD'S QUEENS
I am using James W. Bain's breeding stock and system of queen rearing
22 Years' Queen Rearing Experience
10 Years with My Grandfather
Mel Pritchard
QUEENS $1.00 ea. Satisfaction Guaranteed
Lawrence Pritchard, Ludlow Falls, O.

For Sale
Italian package bees and queens
Health certificate and live delivery guaranteed.
LYNN WILLIAMS
Paradise, Calif.

Protect Your Future. Buy Your Extra Savings Bonds Now.

A TALK TO BEGINNERS

(Continued from page 427)

colonies. A small motor attachment saves much labor of turning the crank by hand.

The room in which the extracting is done should have the windows screened to keep out bees. The extractor should be anchored down securely to the floor to prevent rocking while in motion.

Combs of approximately the same weight should be selected so that the machine will not be thrown out of balance. After the combs are uncapped with a hot knife they are placed in the baskets of the extractor. A part of the honey should be thrown out of one side of the combs, which requires only a few revolutions, then the combs are reversed and all of the honey is thrown out of the other side. The combs should then be reversed again and all of the honey thrown out of the first side. This procedure avoids placing too much strain on the midrib of the combs and results in a minimum of comb breakage.

JUST NEWS

(Continued from page 441)

Benzonia is located at the junction of US 31 and M 115 in Benzie County, near Frankfort, Northwest Michigan. Benzonia is divided from the village of Beulah by the railroad, on Crystal Lake.

Invitation: The Michigan Beekeepers' Association extends an invitation to non-members and out-of-state beekeepers to attend these meetings and to enjoy a pleasant weekend in the scenic North.

* * * * *

The Illinois State Beekeepers' Association Midsummer Meeting sponsored by the Macon County Association, will be held at Chap's Amusement Park, Decatur, Illinois, on July 23.

A. M.
10:00 V. G. Milum, Agriculturist from the University of Illinois, will be master of ceremonies and will also speak on "What's News"
10:15 Wesley W. Osborn, Hillsboro, Ill.—"Get Thee Behind Me Satan" or "How Long Will We Take It?"
10:30 Ekiss Appliance and Heating Service will furnish a display appliance which will be used by the ladies for a Baking Contest sponsored by the Ladies Auxiliary
10:45 Carl E. Killion, Chief Apiary Inspector—"It's Later Than You Think"
11:15 Leonard J. Robins, Mt. Sterling, Ill.—"Dangers of Government Buying"
11:45-12:00 Fifteen minutes of music and entertainment
12:00 Basket Dinner. Free watermelon will be served everyone registered with State Secretary
1:00 Music by students of the Stars of Tommorow Studio
1:30 Mrs. Harriett M. Grace, Director of American Honey Institute, "What the Institute is Doing for the Beekeeper"
2:00 E. C. Bessonet, Donaldsonville, La., "Individual Initiative"
2:30 M. J. Deyell, Medina, Ohio, "Meeting Beekeeping Emergencies"
3:00 Music and entertainment
3:15 Walter T. Kelley, Paducah, Ky., "My Travels Over the World"
3:45 Glenn O. Jones, Atlantic, Iowa, "The Federation Serves the Beekeeper"
4:15 Drawing for door prizes
4:20-5:00 Beekeepers may visit and examine displays of honey and equipment

* * * * *

"Behavior Studies of Honeybees in Gathering Nectar and Pollen", Memoir 288 by Sardar Singh, is from

(Continued on next page)

BEES WILL BE BEES

(Continued from page 417)

two lessons that day. First, if the bees want to be boss, **let 'em be,** and second, that the pain in my right shoulder, which I had had for years, and which I thought was the result of too much rifle practice during my younger days, was gone.

Now to any of you folks with rheumatism who want to try my cure, I just want to say, it may not be successful but it is bound to be exciting.

Now for this time I shall close with these few well chosen words: Bees will be bees and if they want to be boss, **let 'em be.** Use your smoker, it saves stings when you're stung, and makes the job real fun.

Three Band and Three Way DR Italian Package Bees and Queens

JACKSON APIARIES
Funston, Ga.

Bambi Thanks You

During 1950 we produced and sold more than five times as many Bambi brand package bees and extra queens as we did in 1949... The reason is simple: Our product is good: our service is just a little bit better than the average. We DO NOT have any more package bees for sale during 1950 but can promptly fill orders for Bambi brand Italian queens at 75c each.

Ecrivez nous en Francais si vous le desirez. We can also promptly correspond in any other language you may prefer.

Southern Apiaries & Supplies Co.

Chatom, Alabama

JUST NEWS

a thesis presented to the Graduate School of Cornell University September 1948 in partial fulfillment of the requirements for the degree of Doctor of Philosophy. During the progress of this work the author, was a fellow of the Government of the Union of India. Sardar Singh spent part of a year in this country during 1937 studying beekeeping practices and returned here during 1948 to complete work on his degree.

The 56-page Memoir a publication of the New York State College of Agriculture at Cornell University, Ithaca, New York, contains much useful information on how, when, and where honey bees collect nectar and pollen. The following is a summary of this work:

Summary

The constancy of honeybees to a species of flowers has been proved by several investigators. Recent observations have elicited that individual bees are restricted in their working activities and return to the same spot, visit after visit over several days. The present studies were undertaken to investigate further the localization of bees to small areas and the duration of their constancy to such areas.

The courses taken by individually recognizable bees were followed in small plots marked off in large fields of alsike clover, birdsfoot trefoil, aster, and dandelion. Activities of similarly recognizable bees were observed on an isolated white sweet clover plant and on apple trees. Conditions available in an apple orchard were roughly simulated in fields of buckwheat and goldenrod, and fixation areas of bees were worked out.

Individual bees devoted whole visits to an apple tree and returned for later visits to the same tree. Other bees worked between two trees. The area of localization of a bee on alsike clover was as small as 8 by 9 feet for a visit, 14 by 9 feet to 20 by 25 feet for a day, and 41 by 32 feet for a period of 13 days. Four bees remained faithful visitors of buckwheat and aster plots for 25 days, and another for 23 days. A bee working on goldenrod concentrated her visits in as small a patch as 17 by 10 feet for 8 days. The area of operation of a bee for a day on dandelion was 30 by 17 feet when the patch had a fair population of blossoms, but it increased to 61 by 25 feet 3 days later when their number fell down considerably.

Under normal conditions of calm sunny weather when blossoms yielded up to their inherent capacity, bees' visits were very much restricted in area, but they extended their field of activity as the end of the nectar-secretion period approached. Poor yield of nectar and pollen made the bees less consistent, and they were then easily disturbed by a mild breeze or by some other insect visitor.

Individual bees were noticed to change

(Continued on page 452)

CAUCASIANS CARNIOLANS

Hardy, prolific, rapid build-up, best of workers. Caucasians have the longest tongue of any race. Both races build beautiful white combs. BOTH ARE THE GENTLEST OF ALL RACES OF BEES. Gentleness is safest in towns, near neighbors, or near streets or highways. Gentleness saves time, sweat, patience, and work. Discount on quantity orders. Ask.

Prices, Both Races:

Untested Queens .....$1.00 each
Tested Queens ..... 1.75 each

By Air Mail

Albert G. Hann
Glen Gardner, New Jersey

Italian Bees and Queens

Book your order early, to get pick of dates.

Health certificate, and live delivery guaranteed.

Packages with Queens:

	2 lb.	3 lb.	Queens
1 to 49	$2.50	$3.45	$.75
50 to 100	2.40	3.25	.70
100-up	2.35	3.15	.65

Homan Bros.
R. 2 Shannon, Miss.

WHAT IS THE CAUSE OF POOR HONEY YIELDS?

(Continued from page 402)

bees nearby. Both seed and honey crops were poor. Excessive temperatures cooked the seed but the later blooming clover did not yield nectar either although the weather seemed ideal. Anyway, how could I reasonably expect either when this was the first clover crop on that land after many years of hard farming? Many eastern and southern states have had much longer periods of soil depleting crops.

The clovers are by far the farmer's best bet to rebuild the humus and nitrogen content of the soil. One cannot buy that in a sack. The large increase in the next several crops following a legume proves that the practice is sound and profitable to the farmer. When such a program really gets started on American farms bees are assured pasturage galore. The results of increased tillage and improved seed have increased crops temporarily by mining the soil at a faster rate, much to the detriment of all—the nation, the farmer, and the beekeeper. The buggy ride is over.

To state exactly how the beekeeper should proceed in this huge program is too big an order for me. I hope I have started him on the right road to better honey crops.

BESSONET'S ITALIAN QUEENS

We compete with QUALITY and not PRICE. You must decide the type of queens you will use in your hives. Our Italians are the result of a lifetime of experience and are produced by the best scientific means known.

Prices: 1-24, 80c each 25-up, 75c each, air mailed

Bessonet Bee Company Donaldsonville, La.

BETTER BRED QUEENS THREE BANDED ITALIANS

Watch those failing queens and poor colonies. Be sure and replace them with our Better Bred Stock and watch them pay off.

QUEENS — — 50c Each

Calvert Apiaries Calvert, Alabama

Our OWN New crop of No. 1 Michigan clover honey should be ready for the market this month, July. If you buy honey, be sure and get on our mailing list at once. You surely want the best honey you can buy. Address E. D. Townsend & Sons, Northstar, Michigan. Where the best honey comes from.

40c Italian Queens

Quality and low cost is your first thought when ordering queens you get from

Farris Homan
Shannon, Miss.

JENSEN'S

Quality Queens

The kind of queens you will be proud to own. The price you pay is a minor factor as compared with the difference in performance and ultimate results in the supers—plus the pleasure of working with good stock.

Sub-standard prices are consequential to lowered standards of quality in queens just as in most other commodities. Isn't that just plain common sense? A really good queen is worth several times her own weight (5 grains) in purest gold. But a poor one is not worth your time to install.

Our old reliable "Magnolia State" strain Italians: 1-24, $1.00; 25-99, 90c; 100 and up, 80c each

---

Jensen reared Dadant Starline Disease Resistant Hybrids (Italian), Daughters of instrumentally inseminated mothers, mated in isolation yards to drones of the same stock, but different lines, resulting in queens that are vigorous and very prolific. The bees are uniformly marked and as gentle as any other good Italians.

1-24, $1.25; 25-99, $1.15; 100-999, $1.05; 100 and up, 95c each.

Jensen's Apiaries
Macon, Miss.

Clipped and marked free
Air Mailed where distance justifies

Requeen with Three Way HYBRID Queens

These breeder queens are a cross of two lines developed by the Government in their breeding project and their virgins are mated to drones of our strain of bees.

We are pleased to offer you these queens and feel you cannot go wrong in requeening your honey producing colonies with them. We will keep our strain of Italian bees to supply those who do not care for the Hybrids.

When ordering Hybrids allow as much time as possible so your order can be filled without delay.

Prices

HYBRIDS Cross No. 1	Our Strain
1-10, ...$1.25 ea.	1-25, ...75c
11-25, ...1.15 ea.	26-up, ..65c
26-up, ...1.00 ea.	

"Satisfaction Guaranteed"

Rossman & Long
P. O. Box 133 Moultrie, Ga.

QUEENS Garon's High Producing Stock QUEENS
to Overcome Low Honey Prices

PRICES

On Our 3-Banded Italian Quality Queens		On Garon Reared Dadant Starline Hybrid Disease Resistant Queens	
1-24	.....70c	1-24	.....$1.10
25-99	65	25-99	..... 1.00
100-499	60	100-499	..... .95

Queens Mailed Prepaid, Regular or Air Mail, Painted and (or) Clipped at No Extra Charges.

Garon Bee Company Donaldsonville, La.

The Rich Honey Farms Jeanerette, La.

A CHOICE OF THREE FINE STRAINS OF QUEENS	1-24	24-up
DADANT'S STARLINE HYBRIDS	$1.10	$1.00
Rich's Leather Italians	.85	.75
Caucasians	.85	.75

These prices are effective to Sept. 16th

QUEENS By Return Mail **45c**

— Bright 3-banded Italians —
2-lb. package with queen, $2.25
3-lb. package with queen, 3.00

Satisfaction Guaranteed

Norman Bros. Apiaries
Ramer, Ala.

THRIFTY QUEENS
Three banded Italians only
Lots of 100, $50.00
Smaller lots, 60c each
REMEMBER — THRIFTY BEES are GUARANTEED to please
W. J. Forehand & Sons
Fort Deposit, Ala.
Breeders Since 1892

XUM

NOW THE NEW 1950

ABC and XYZ
OF BEE CULTURE

JUST OFF THE PRESS!

The 1950 Edition is Not Just a Book on Bees

IT IS ALSO:

- A History of Beekeeping
- A Textbook on Beekeeping
- An Encyclopedia of Beekeeping

All in One Grand Book

630 Illustrations 720 Pages

$3.75 Postpaid

The A. I. Root Co. Medina, O.

JUST NEWS

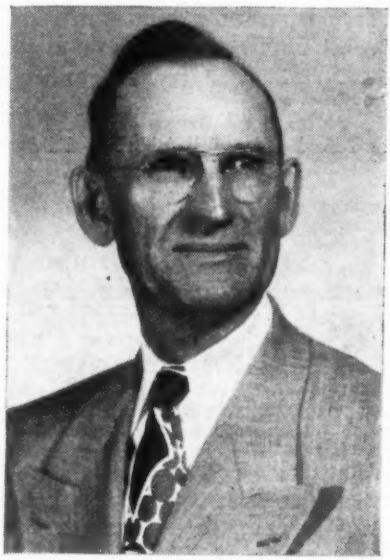
(Continued from page 449)

the crop on which they foraged if the crop to which they were localized failed in that area or if the hive was shifted to another locality.

Though the alighting points of a bee in the plot were closely associated, the departure points were widely spread out. Individual bees made from 3 to 10 trips a day on different crops under the meteorological and honeyflow conditions around Ithaca in 1947 and 1948. The longest trip followed was that of a bee working on goldenrod—169 minutes spent in gathering a load of nectar.

Self-unfruitful varieties of fruit trees are the crops chiefly affected by the localization of bees to small areas. It is suggested that cross-pollination in self-unfruitful and pollinizer varieties is brought about by bees localized on the adjacent sides of two trees; similar bees that spread out under temporary shortage conditions; and searcher bees—young bees starting to forage for the first time, or old bees out of a job. Besides, the pollen left by a bee on a flower on the fringe of her area is picked up by another bee, the fringe of whose area overlaps the first one, and is disseminated on blossoms in her area.

Fire of unknown origin virtually destroyed the plant of The A. I. Root Company of Texas, 537 South Flores St., San Antonio, Saturday noon, June 24. All employees had left the plant at the time.



H. S. Foster

H. S. Foster, who succeeded Robert Foster as State Apiarist for Florida, is also President of the Southern Beekeepers' Conference.

(Continued on next page)

Look This Over - - - Something New

We offer untested queen-daughters of hybrid breeding stock developed by the U. S. Dept. of Bee Culture and distributed by the Honey Bee Improvement Coop. Assn. of Ohio. We also have our regular stock of light colored Italians. Please **specify** "Hybrid" or "Regular" on orders.

Hybrid or Sunkist Italians: 50c each, airmailed, clipped.

Sunkist Bee Company Convent, La.

WANTED TO BUY

Everyone is asking for SECTION COMB HONEY—that delicious, tasty, and most sanitary product of the honey bees.

Your local merchant is your best customer as he is receiving requests every day for this delicacy packaged by the bees themselves.

Whether you plan on a few supers this season, or want to equip your entire apiary for SECTION COMB HONEY, we have the necessary equipment, including Dadant's Thin Surplus for Sections.

Immediate shipment on

A PACKAGE OF 100 — OR A CARLOAD

MARSHFIELD MFG. COMPANY Marshfield, Wisconsin

(Heart of Wisconsin's Dairyland)

Manufacturers — Retailers

JUST NEWS

The Montgomery County (Ohio) Beekeepers' Association held its summer meeting at Trotwood on the afternoon of June 4. F. C. Charbonneau, president, called for a discussion of plans for furnishing colonies of bees to growers of clover seed. The demand for bees to pollinate legumes is increasing each year and it seems essential that a reasonable, uniform rental charge be established. Following a talk by M. J. Deyell, Editor of Gleanings, a wreath was placed on the grave of L. L. Langstroth in Dayton Cemetery.

Dr. J. Anderson, M.A. B.Sc., former editor of Scottish Bee Journal, says, "Recent research has shown that dark honey is far richer in minerals than light honey, particularly in iron, which probably is in a suitable combination and degree of solubility for absorption in the human system. It might well be that the time is not far distant when cases of pernicious anaemia will be successfully treated with a diet of dark honey." — From The Shamrock Press, S.W.19 for the South-Eastern Federation of Beekeepers' Associations, Sussex, England.

Summer Prices

Queens 50c

	1-50	51-up
2-lb. pkg. with queen	$2.40	$2.20
3-lb. pkg. with queen	3.00	2.80

For queenless packages deduct price of the queen.

W. E. Plant

Hattiesburg, Mississippi

* * * * *

CUYAHOGA MEETING

(Continued from page 421)

Honey, now on the market, said this takes over one million pounds of honey each year. See page 428 of this issue for a further elaboration on the talk by Mrs. Grace.

A bit of fun is always in order, even at a bee meeting, and those who failed to see the hive of white bees exhibited by a Cleveland beekeeper missed an interesting part of the program.

XUM

York's Package Bees and Queens for 1950

QUALITY BRED ITALIANS

The Strain Preferred by Leading Honey Producers

Prices with Young Laying Queens

Packages	2-lb.	3-lb.	4-lb.
1 to 24	**$3.25 each**	**$4.00 each**	**$4.75 each**
25 or more	**3.00 each**	**3.75 each**	**4.50 each**

Young Laying Queens, $1.00 each; Tested, $2.00 each.

Queenless packages, deduct $1.00 per package

Order direct from this ad and save time. Book order now and have bees shipped when wanted.

York Bee Company **Jesup, Georgia**

(The Universal Apiaries)

ITALIAN

Tested Queens — $1.00

Hardy Northern Stock

Our Queens are bred for Honey Production. Untested Caucasian Queens, July 1st, 75c. Place orders early season, 65% booked now.

Richard Livermore Apiaries

Collins, Ohio

ITALIAN BEES AND QUEENS

The very best quality queens and packages. Complete satisfaction and live delivery guaranteed.

2 lb. package with queen $2.00
3 lb. package with queen 3.00
Queens, each ..... .45

Bayou Bee Co.

Rt. 1 Box 49 Montegut, La.

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, regulations, and plant possibilities.

1 year, $2.00, U. S. and Canada

Foreign postage, 50c a year extra

AMERICAN BEE JOURNAL

Hamilton, Illinois

Queens Our Specialty

Italian, Caucasian, and Carniolans

Three Isolated Mating Yards to Prevent Mixing Breeds

Italian queens, 1-10, $0.90
11-49, $0.85 50-up, $0.80
After May 15th, $0.50 each
Carniolan, the most gentle and good producers, $1.20 each
Caucasian, very gentle and produce beautiful comb honey, $.90

All queens shipped by Air Mail and guaranteed to please

Walter D. Leverette Apiaries

Box 364 Fort Pierce, Florida

Tried in Service and Found Good . . .

IMPERIAL ITALIAN and Hybrid Caucasian Queens .....80c each
Two-pound package with queen $2.50
Three-pound package with queen $3.40

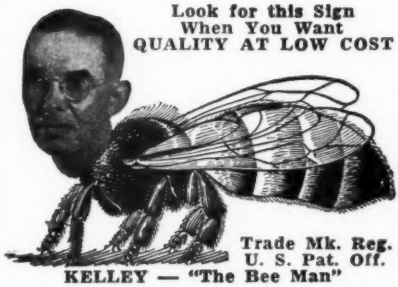
The Coffey Apiaries

Whitsett, Texas

Requeen with HOLLOPETER'S Hardy Honey Gathering Italians

Our 50th year with bees, 40th as queen breeders, in Northern Mt. location, where we have developed a distinctive strain of hardy, prolific, honey-gathering Italians used by many beekeepers. Young laying queens, 1-4, each, $1.00; 5-9, 90c; 10-24, 80c; 25-99, 75c; 100-up, 70c.

White Pine Bee Farms, Rockton, Pa.



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When You Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

QUEENS

Improved Hybrid Cross

These bees appear to be light, 3-banded Italians and are gentle and easy to handle and stay on the combs. However, they are of greatly improved quality and lay frame after frame of solid brood.

Young Improved Laying Queens by Prepaid Air Mail **75c Each**

Lots of 25 and up, 65c Each

Walter T. Kelley Co., Box 210, Paducah, Ky.

QUEENS
Bright Three Banded Italians

If you need queens you need the very best, and that is just what we have. Let us prove it.

1, 75c; 50, 70c; 100, 65c each.
Tested Queens, $1.50
Breeders, $5.00
No cost for clipping

Taylor Apiaries
Box 249 Luverne, Ala.

MOORE'S STRAIN

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view. By careful selection during all these years I have succeeded in producing a strain of three-banded leather colored Italian bees known as Moore's strain of Italians which has won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Send for descriptive circular and read reports from those who have tried them. Untested queens, $1.00 each; 12 or more, 75c each.

J. P. Moore, Falmouth, Ky.
Route 3
Former Address: Morgan, Kentucky
Safe arrival and satisfaction guaranteed

High Quality QUEENS

75c each
by Airmail

Carlus T. Harper
New Brockton, Ala.

Northern Bred Leather Colored Italian Queens

50c Each
Air Mail if distance justifies
Better equipped to give good service

Diemer Bee Co.
Rt. 2 Box 7 Liberty, Mo.

Little & Moore Apiaries

Originally
LITTLE'S APIARIES
The John M. Davis Strain
GUARANTEED TO PLEASE
or money refunded
April 1st to June 1st:
1 to 10, $1.20 each
10 to 100, $1.10 each
June 1st to Nov. 15th:
1 to 10, $1.00 each
10-100, 90c each

Little & Moore Apiaries
Shelbyville, Tenn.

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